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OIL WEEKLY

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APRIL 13, 1936 NUMBER 1

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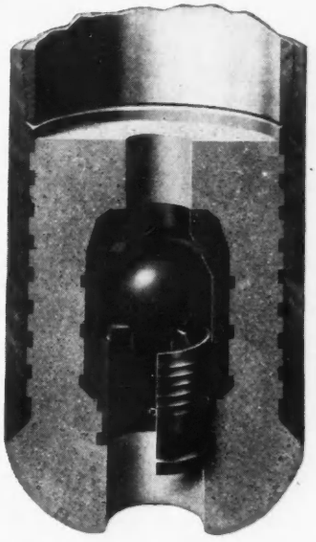

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ENGINEERING « NEWS » STATISTICS

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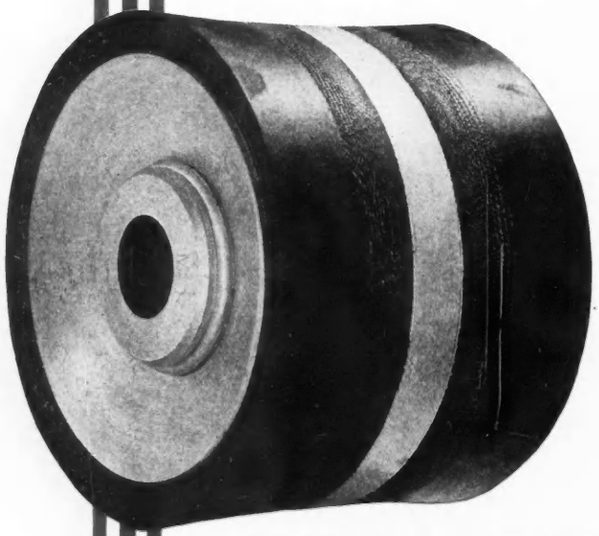

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THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor.

. . . this Week

THE efficiency of the drilling rig has within recent years become of prime consideration. It is of importance that purchasers of drilling equipment consider the power size of the prime movers required for particular types of drilling and for the various types of powered rigs. An analysis of the size of prime movers required for rotary drilling rigs will be of value and interest. **Page 30.**

THE modern conception of accident prevention is elimination of design, construction and operation errors that make injuries possible. An important phase of such work is the use of protective equipment, which includes mechanical efforts to protect workers and efforts to teach employees the correct operating procedure in order that he may avoid hazards. Full appreciation of the importance of these efforts are shown by J. L. Risinger in an interesting article. **Page 34.**

VOCATION training courses are bringing about better understanding and appreciation of the work to be done. Oil field workers also are realizing the value of such work. These classes cover almost every vocation in life and their popularity is increasing. The American Petroleum Institute has been active in promoting and guiding the work. **Page 32.**

OIL production was discovered in the Rodessa field on July 7, 1935. Up until April 1, 1936, 120 oil wells had been completed and 4,689,000 barrels had been produced. The accumulation of oil and gas occurs on the upthrown side of the Rodessa fault, extending northeast by southwest from southwestern Arkansas through the northwestern corner of Louisiana into northeastern Texas. Wells in the field are drilled with heavy-duty rotary rigs. The principal drilling difficulties encountered are the sticking and twisting off of drill pipe, wash-outs and the sticking of casing. **Page 21.**

IT TAKES a split decision of the Supreme Court to determine state's rights as against federal interference, but in Oklahoma the "army" can decide as between state's rights and city rights. Residents of the city have an idea that their personal rights also are involved, but the governor contends that the state is supreme in regulation of its own—and a militiaman outranks a court's sheriff in the state house. Use of the army in Oklahoma oil matters is no new precident, but the idea of putting a dome on the capitol with oil revenue from the capitol grounds presents a new angle.

A REAL "bird's-eye view" of the Coastal area from the Rio Grande to the Mississippi is provided in a picture map of that region on display at Houston. The observer has the privilege of walking over the map during inspection and gets full demonstration that "there is no better map than a picture." **Page 86.**

FEW weeks ago delayed winter weather was having a good effect upon oil consumption because the cold required fuel oil and kerosene. Currently the cold weather is hurting consumption, especially of kerosene. Which summed up, is just another parodox to upset the dope for prognosticators. But things are being kept well in hand—even in California, and soon the spring plowing and the open road should brighten the rosy outlook. **Page 47.**

WHILE all eyes are turned toward Europe and Africa for political discord, things are pending in South American that are of greater concern to some prominent units in the oil industry. Dictatorship in Venezuela has worked all to the good for the oil industry during recent years—because the dictator was kindly disposed toward those interests. But death has brought changes which give a pending election much importance. **Page 52.**

RODESSA has stolen the show from East Texas as the bad boy of the industry—and has East Texas "hollerin' calf rope." Its interstate location has a three-way controversy on as between the states and Washington, but so far its flood of uncontrolled oil is more threat than reality. But there is something humorous about East Texas asking that Louisiana oil be kept out of Texas. **Page 8.**

The Oil Man's Calendar

APR. 11–13	Petroleum Industry Electrical Association, Tulsa, Oklahoma.
13–17	American Chemical Society, Petroleum Division, Kansas City, Missouri.
14	American Petroleum Institute, Division of Production, Pacific Coast District, Los Angeles, California.
16–18	National Petroleum Association, Cleveland, Ohio.
20–25	Oil Equipment & Engineering Exposition, Houston, Texas.
MAY 5– 8	American Gas Association, Natural Gas Department, Dallas, Texas.
13–15	American Petroleum Institute, Mid-Year Meeting, Tulsa, Oklahoma.
13–15	Natural Gasoline Association of America, Tulsa, Oklahoma.
16–23	International Petroleum Exposition and Congress, Tulsa, Oklahoma.
19	National Association of Purchasing Agents, Tulsa, Oklahoma.
21	Independent Petroleum Association, Tulsa, Oklahoma.
22	National Stripper Well Association, Tulsa, Oklahoma.
29–31	National Oil Scouts Association, Annual Meeting, Baker Hotel, Dallas, Texas.
JUNE 17–20	American Society of Mechanical Engineers, Dallas, Texas.
18–19	Pennsylvania Grade Crude Oil Association, State College, Pennsylvania.
JULY 31	Interstate Oil Compact Commission, Dallas, Texas.
NOV. 9–12	American Petroleum Institute, 17th Annual Meeting, Chicago, Illinois.

Seek Injunction

MOVEMENT OF RODESSA CRUDE GOES TO COURT

KILGORE, TEXAS

ATTORNEYS representing Pelican Oil & Gasoline Company and East Texas Refining Company will petition federal court in this district for an injunction restraining the Federal Tender Board from interfering with shipments of oil interstate from Rodessa field in Louisiana through the East Texas field.

This decision was made following refusal of the board to hold a hearing scheduled for April 8 on application of East Texas Refining Company for tenders permitting Tide Water Oil Company to move 50,000 barrels of Rodessa crude oil from the Sexton farm of Pelican Oil & Gasoline Company in Rodessa field. Up to April 10 the oil had not been moved.

April 6, applications for tenders by East Texas Refining Company for 125,000 barrels of oil from the Sexton tank farm were denied by the Federal Tender Board, J. W. Steele, chairman of the board announcing:

"After consideration of the evidence and testimony presented, the board is of the opinion the oil in question is contraband oil as defined by the Connally Act and orders that the tenders be rejected."

Repetition of application for tenders was made by East Texas Refining Company on strength of an opinion issued April 6 by J. W. Fitzgerald, legal advisor to the Federal Tender Board, in which he stated: "I believe you (the board) have no jurisdiction on oil originating in Rodessa and moving through this field, but if it stops here, and is refined here, the board has authority to require tenders."

In calling attention to the above opinion, there was written across the application for the tender: "This oil will move continuously in interstate commerce, through the East Texas field, destination unknown. This tender is filed for record purposes only, and you are requested to endorse thereon the fact that your board is without jurisdiction over the same . . ."

Freeman W. Burford, president of East Texas Pipe Line Company, is quoted as saying he counted heavily on Fitzgerald's opinion and that the oil would move. Legal counsel for the applicant claimed Rodessa oil was being moved interstate into Texas by three major pipe line companies, but that the board had never undertaken to assert jurisdiction over these movements.

An attempt was made by the investigating agency of the Federal Tender Board to show that an order issued by Dr. J. A. Shaw, director of the mineral division of the Louisiana Conservation Commission, permitting Pelican Oil & Gasoline Company to produce 20,000 barrels per day at Rodessa, was without legal authority, such authority being vested by law in Robert Maestri, commissioner of conservation. An affidavit from Warren Moore, examiner for the agency, stated Dr. Shaw said he issued the order only after discussing the situation with Maestri over the telephone. Maestri, on the other hand, was quoted in the same affidavit as stating he had not delegated any authority to Dr. Shaw to make any decisions upon orders issued by the department and that under no condition would he do so.

Austin, Texas.—The Texas Railroad Commission has ordered the allowable for wells in the Rodessa field to be reduced 50 barrels per day to 350 barrels. This order became effective on April 7.

Commission Chairman Ernest O. Thompson stated that this system was installed in order to bring Texas allowable in line with the allowable fixed for the Louisiana section of that field by conservation officials of that state.

This seemed to end the crisis which developed last week when an effort was made to move 125,000 barrels of Rodessa crude from leases of Pelican Oil Company.

The Federal Tender Board declined to approve the application to move this production, although Louisiana conservation officials had granted permission to run 20,000 barrels a day for two months.

Freeman W. Burford, who sought to move the oil for East Texas Refining Company, characterized the tender board decision as discriminatory and charged that it had refused to grant his line the same privileges that major companies had.

In Austin Commission Chairman Thompson insisted that increasing the production at Rodessa would have no effect on the allowable for the East Texas field. He said, "We are now allowing East Texas operators to produce all the oil which the scientific facts indicate the field can produce without physical waste. The East Texas allowable has been steadily increased both before and after the Rodessa field came in.

"There is nothing that I see to become alarmed about. The Louisiana officials have cooperated with us, and we expect to work harmoniously with them."

It was shortly after this statement was released that the 350-barrel allowable announcement was made.

The adjustment in the Rodessa allowable and other allowable changes effected by the commission since the first of April brought the total allowable for the state to 1,150,514 barrels per day on April 7. This includes an allowable of 446,138 barrels per day for East Texas.

Investigation

FEDERAL PRICE QUIZZ TO START IN MICHIGAN

WASHINGTON, APRIL 10.

A SPECIAL grand jury investigation of alleged price fixing in the oil industry, probably in Michigan, will be instituted by the Department of Justice within the next few days, it was announced this week by Attorney General Cummings.

Charges of price fixing have been under investigation by the department for a considerable period, and it was revealed last month, during hearings on the department's appropriation bill for the coming fiscal year, that this was one of the major studies of industrial conditions on which the anti-trust division was working.

It was stressed by the attorney general that the grand jury inquiry will not necessarily mean the filing of charges against anyone in the industry. The situation in Michigan has been under investigation by state authorities for some time, and on the basis of developments in that inquiry the matter was brought to the attention of the federal government last year.

One of the prime movers in the matter has been the National Oil Marketers Association, which is supporting a movement for the enactment of state laws denying licenses of out-of-state corporations. The determination of the Department of Justice to go ahead with the investigation was seen by Paul E. Hadlick, secretary and counsel of the association, as "a hopeful message for the thousands of independent oil jobbers whose economic existence is threatened by these practices.

"During recent years," Hadlick declared, "the independent jobber has been continually squeezed between the pegged price at which he must buy from the refiner and the maintenance, through refiner-controlled outlets of retail prices which do not leave the independent an adequate margin of profit."

DEMANDS BOARD

Ickes wants Rodessa same as East Texas

WASHINGTON, D. C.

ESTABLISHMENT of a Federal tender board for the Rodessa field will be demanded of Secretary Ickes by Senator Connally of Texas if reports now being prepared substantiate allegations that the Louisiana conservation committee has refused to restrict production and that other states' markets are being inundated with Rodessa oil.

Aroused by charges that East Texas, where wells are shut down by proration orders, is being flooded with Louisiana

oil, Senator Connally last week took the matter up with Secretary Ickes personally, and received a promise that the situation would be carefully studied and that appropriate action would be taken, if necessary, to protect the industry in those states where it is submitting to production regulation.

The question of Rodessa oil has been before the Interior Department for several months, being brought up originally by the Independent Petroleum Association of America and by producers who found themselves meeting new, severe competition from the unregulated Louisiana production. After repeated urging, the secretary ordered an investigation made of the situation and within a few days will receive a report.

Senator Connally's interest in the matter was asked by East Texas producers. "I have been advised by interested parties in Texas that the Louisiana conservation commission, which has jurisdiction to control drilling and production of oil in Louisiana, has declined to restrict production of oil in the new flush field known as Rodessa," the senator said. "These interests are appealing for the exercise by the Secretary of the Interior and by the Louisiana authorities of control of the Rodessa flush production. It is unfair that Texas producers should have their markets flooded with oil from Louisiana while their own wells are restricted and production is controlled.

"I had a conference with Secretary of the Interior Ickes with regard to the oil situation in that area. Mr. Holland, head of the Petroleum Administrative Board, has recently visited that territory and has investigated conditions. He is making a report to the secretary of his findings and recommendations.

"As soon as Secretary Ickes receives the report and has opportunity to review it, he and I shall confer again with regard to the possibility of action by the federal authorities in an effort to secure equitable treatment for Texas producers, in view of the threat from Rodessa field."

LOVEJOY TO SPEAK

IPAA is to hear him at mid-year banquet

John M. Lovejoy, president of Seaboard Oil Corporation of Delaware, will be the speaker at the Mid-Year Banquet of the Independent Petroleum Association of America to be held during the International Petroleum Exposition on Thursday evening, May 21, at Tulsa. Lovejoy is a member of the Board of Directors of the association.

The Mid-Year Meeting of the association will be held on May 21, beginning with the membership meeting at 9:00 A.M., followed by a meeting of the Board of Directors and Executive Committee. Delegates will be given an opportunity in the afternoon to visit the exposition. J. F. Darby, president of Darby Petroleum Company, will preside at the evening session.

On Friday, May 22, the Annual Meeting of the National Stripper Well Association will be held, under the leadership of William Bell, president, of Robinson, Illinois.

Both associations are joining in the mid-year banquet Thursday evening.

Timely Program

SOUTHWEST A. P. I. NAMES R. D. RISSER AS CHAIRMAN

By WARREN L. BAKER

SHREVEPORT.

OUTSTANDING problems of the industry today, both of a technical and economical nature, were keynotes of a well diversified and timely selected program presented at the Spring Meeting of the Southwestern District of the American Petroleum Institute Division of Production held in Shreveport on April 9 and 10.

It was particularly fitting that the first meeting of this group of oil men ever held in Louisiana should take place this year, for the territory surrounding Shreveport is at present receiving its greatest wildcat development campaign in history, and the attention of the industry has been attracted to the region for several months. The present drilling play started when deep prolific production was discovered at Rodessa, lying on the extreme northern limits of the Texas-Louisiana boundary line. Additional importance was given the area a month ago when a producing well was completed at Talco in northeast Texas.

The program was so diversified it might well be divided into four classifications, namely: (1) Importance of Louisiana and Rodessa; (2) Economic problems; (3) Vocational training and accident prevention; and (4) Drilling and pumping trends. These four general subjects cover the outstanding conditions within the industry today. The first day of the meeting was devoted entirely to a study of the importance of Louisiana and to national economic problems. The morning session of the second day was featured by papers on the vocational training and accident prevention work of the American Petroleum Institute. The afternoon and final session on April 10 was devoted to drilling and pumping trends, with the former receiving the greatest stress.

Any American individual failing to express an honest opinion on matters affecting our national welfare fails in his duty to himself and his country.

★

The American governmental system is founded on the basis that every man is born equal, which means that every man shall have equal opportunities.

The founders of our government were not foolish enough to presume that each individual had equal talent, equal brains and equal energy. They did insist that each one should have an equal start in his rights and that no one should be denied the opportunity of forging ahead.

In other words they did not insist on a foot race where the runners all had to run at the same rate of speed. They did insist, however, that in the foot race of life all runners start at a given line and be given an opportunity to win the race from that point on their own ability.

Importance of Louisiana

"Eight new oil fields and deeper productive sands in five old fields were discovered in Louisiana in 1935," C. K. Moresi, Louisiana State Geologist, told assembled guests. "Seven of these fields are located in the southern part of the state," he continued, "and one field in the northwest portion of the state. These new fields were not sufficiently developed to contribute to 1935 production, yet this state produced 49,000,000 barrels of oil; about 15,000,000 barrels more than produced during the previous peak year of 1920."

The production of oil for the entire state has increased since the first of the year from 169,000 barrels daily to 202,000 barrels daily; an increase of 20 percent in the past three months. The Rodessa field has been largely responsible for this increase. On the basis of these facts, Louisiana should produce over 80,000,000 barrels in 1936. "An impotant fact, if not the most important of all," Moresi added, "is that the total value of oil produced in Louisiana in 1935, compared with the total volume produced in 1933, increased 186 percent."

Henry V. Howe of the Louisiana State University presented a paper on Louisiana petroleum stratigraphy in which he attempted "to supply at least a partial picture of the numerous horizons from which future production may be obtained in the 30,000- to 40,000-foot section of sediments which composes the Gulf Coast geosyncline." Howe made no pretense of having prepared an exhaustive survey of the occurrence of petroleum in Louisiana. He did, however, try to convey the great number of horizons from which Louisiana has produced 615,628,423 barrels of oil and 2,931,288,000,000 cubic feet of gas during the past 35 years.

John S. Ivy, United Gas Public Service Company, Houston, concluded dis-

cussions on the importance of Louisiana with a paper on the Rodessa field in which he spoke of geological, drilling and producing conditions. The Rodessa field is one of the major discoveries of 1935. Not only has it produced 4,689,000 barrels of oil since July 7, 1935, but it has created an important wildcat campaign. The accumulation of oil and gas ocurs on the upthrow side of the main Rodessa fault in horizons underlying the massive anhydrite member of the Glen Rose formation at a depth of about 6000 feet. The structure is typically fault line in type. The foult extends in a northeast-southwesterly direction from southwest Arkansas through the northwestern-most corner of Louisiana into Texas. The total known extent of surface fault is approximately 40 miles. Ivy listed the principal drilling difficulties as being the sticking and twisting-off of drill pipe, wash-outs, and the sticking of casing and liners. He stated the chief causes of these troubles to be: wash-outs causing twist-offs; allowing the mud viscosity to become too low; failure to remove cuttings; crooked holes; and carrying too much rat hole while coring.

"The principal production problem is that of excessive gas-oil ratios," said Ivy, "which is due to the failure to land and cement the production string below the gas-oil contact that occurs at sub-sea depth of about minus 5725 feet."

Economic Problems Studied

Threats of federal control and of increasing taxation were declared to be serious current economic problems by W. R. Boyd, Jr., executive vice president of the American Petroleum Institute when he addressed the meeting as the second speaker on the program. Boyd said that the oil-producing states, through the interstate oil compact and other appropriate control measures, can prevent waste, promote conservation, and protect property rights, with the compact permitting all interest to work together in a common cause. He expressed the hope that other states would join with the six present signatories to the compact, because it is a democratic and constitutional way to solve the problem of petroleum conservation.

"There is no need to snap the whip of federal control over the back of this industry," he added. "Those who say this industry is not conservation minded, or is intentionally profligate with the nation's oil reserves, know not whereof they speak. This industry is committeed to conservation if for no other reason than that of self-preservation."

Not only is there no evidence of an imminence of shortage of oil, said Boyd, but the unremitting progress of the industry in finding, recovering, and refining oil have multiplied the output of refined products, widened their field of usefulness, reduced their cost, and assured adequate supplies. Scientific developments in virtually every branch of the industry, he explained, are tending to extend and to expand both crude oil reserves, now estimated at above 12,000,000,000 barrels, and the limitless substitute sources such as bituminous coal and oil shale.

Speaking of taxation, Boyd commented that the cost of federal, state and local government is growing with discouraging rapidity, adding: "The cumulative tax bill is so terrifying as to arouse fears of causing a chronic epidemic of pernicious anemia of the pocketbook." He said the petroleum industry is instrumental in directing to government treasuries each year more than 11 percent of all tax revenue collected, and currently find itself in the position of seeing govenment derive from taxes on gasoline more than the industry itself can make by manufacturing and marketing the commodity. He estimated the oil tax bill at $1.14 per barrel.

Risser Elected Chairman

R. D. Risser, superintendent for Shell Petroleum Corporation in the Iowa district of the Louisiana Gulf Coast, was elected chairman of the Southwestern District of the American Petroleum Institute, Division of Production for 1936.

A. W. Thompson, Mandeville & Thompson, Inc., Houston, was selected vice chairman for Texas. G. I. McBridge, The Texas Company, Shreveport, will be the vice chairman for Louisiana. Colonel W. C. O'Farrell, Standard Oil Company of Louisiana, El Dorado, Arkansas, will be chairman for Arkansas; while Chester Dexter, Hobbs, New Mexico, will be chairman for New Mexico. G. B. Corless, Humble Oil & Refining Company, Houston, was elected secretary-treasurer.

The following men were elected to the advisory committee: C. E. Sutton (chairman), Pure Oil Company, Houston; E. H. Blum, Atlantic Oil Producing Company, Dallas; D. Collins, Shell Petroleum Corporation, Houston; J. D. Collett, Collett & O'Keefe, Fort Worth; M. G. Cheney, Anzac Oil Corporation, Coleman, Texas; Charles Fitzgerald, Sinclair Prairie Pipe Line Company, Fort Worth; Charles Gladden, Magnolia Petroleum Company, Dallas; E. De Golyer, Felmont Corporation, Houston; Rex Hamaker, Reed Roller Bit Company, Houston; Sid Childress, Rio Bravo Oil Company, Houston; Roy B. Jones, Panhandle Refining Company, Wichita Falls; E. A. Landreth, Landreth Production Company, Fort Worth; A. M. McCormle, Stanolind Oil & Gas Company, Fort Worth; R. S. McFarland, Texas Seaboard Oil Company, Dallas; F. Ray McGrew, Standard Pipe Line Company, Shreveport; R. H. Morrison, The California Company, Dallas; John A. Ritter, Sun Oil Company, Dallas; Charles F. Roeser, Roeser & Pendleton, Inc., Fort Worth; Arch H. Rowan, Rowan Drilling Company, Fort Worth; Joe Russel, Gulf Oil Corporation, Houston; Ed Salrin, Tide Water Oil Company, Houston; F. C. Sealey, The Texas Company, Houston; W. L. Tobe, Columbia Oil & Gas Company, Dallas; John R. Suman, Humble Oil & Refining Company, Houston; R. A. Allison, Shreveport; J. R. McWilliams, Standard Oil Company of Louisiana, Shreveport; C. W. Hughes, Arkansas Natural Gas Company, Shreveport; J. S. Hassan, Ohio Oil Company, Shreveport; N. C. McGowan, United Gas Public Service Corporation, Shreveport; L. M. Moffitt, Triangle Drilling Company, Shreveport; and Arthur R. Campbell, secretary, Mid-Continent Oil & Gas Association, Shreveport.

D. E. Buchanan of Hanlon-Buchanan, Incorporated, completed the economic discussions by speaking on the importance of memberships in the institute, and the work it is doing.

Vocational and Accident Prevention Work

The growing interest in vocational training activities in the petroleum industry is attested by the growth of these schools.

In speaking on this subject Walter H. Meier of Atlantic Oil Producing Company, Dallas, stated, "According to a report issued by the Texas State Board for Vocational Education, dated September, 1935, there are 4480 students enrolled in petroleum series vocational courses; this compared with 4088 in May, 1935. There were 248 classes conducted in 57 different localities by 220 teachers. There are 153 oil companies represented in the above enrollment. As of September, 1935, 2301 certificates of credit for completion of unit courses had been issued."

Meier defined the scope of vocational training, discussed the advantages it offers oil field workers, and outlined the history of such work. Full text of his paper will be found elsewhere in this issue of THE OIL WEEKLY.

J. L. Risinger, of the department of accident and fire prevention of Magnolia Petroleum Company and Magnolia Pipe Line Company, Dallas, gave an excellent paper on accident prevention. "There is a wide difference between an accident and an injury," he stated. "An accident might be termed as an error in design, construction, operation, procedure or personal performance of duty, many of which occur without injury to persons and sometimes without damage to property, but never without cost to a company.

"The modern conception of accident prevention is the elimination of the errors," he continued, "and therefore their direct and indirect cost to a company."

Protective Equipment

He listed four classes of portective equipment for the prevention of accidents, namely: (1) equipping of the individual with information as to correct operations and procedure so he may avoid hazards in spite of guards, design and operations; (2) effective guards; (3) standardized, correct and efficient design and operating procedure; (4) personal protective equipment, such as goggles, etc.

Good Technical Papers

Three technical papers on actual equipment operating practices consisted of two on drilling and one on pumping. All three represented the latest trend in the field. Because of the increasing use of mechanical driven rig, the two drilling papers were on this subject.

George P. Livermore, Mandeville & Thompson, Incorporated, Midland, Texas, presented a mechanical analysis of the size of prime movers for rotary drilling rigs. After outlining the changes in practices and thought during the past two years, he went into an analysis of the various types of drives between prime mover and slush pump. It has been only during the past few years that such practices as using standby units, compounding, paralleling and over-all efficiency have been given any consideration. As drilling depths became greater it was the practice until recent years to enlarge the capacity of

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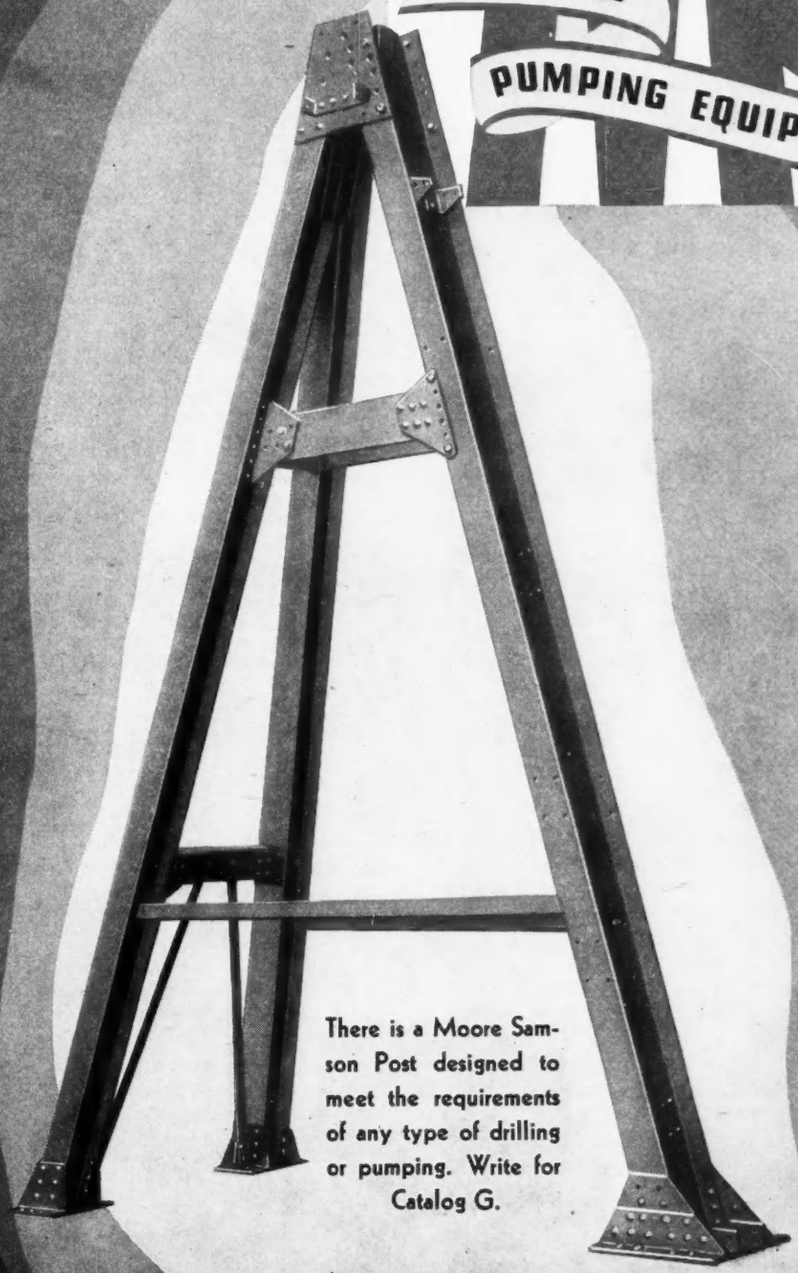

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the rigs. Today the practice is to improve the efficiency of the rig.

Livermore continued by stating, "It is generally accepted that the determining factor in choosing the size of the prime mover in either steam or power rigs is the slush pump load.

After size of such prime mover is determined, it is a practice to duplicate this size for use in driving draw works and rotary. Thus, with this arrangement, the unit driving draw works acts as a standby unit for driving the slush pump.

The combined capacity of the prime movers may be made available for hoisting. The greater the number of speed changes on the draw works, the greater the flexibility for hoisting.

The trend in Diesel mechanical driven rotary rigs was the topic of E. Opferkuck of National-Superior Company, who said the development of medium weight, heavy-duty models of 400 to 600 revolutions per minute had overcome the previous disadvantages of slow speed, heavy weight and high initial cost. He gave the most popular combination as being two engines of the same size, of moderate weight, variable speed (200 to 600 revolutions per minute), convertible fuel type, with drive from engines by V-belt to chain or gear box, so that either or both engines can drive to either or both draw works and/or slush pumps, also so that they can be compounded for hoisting.

R. E. Bridges of Humble Oil & Refining Company, Wichita Falls, presented a paper on backside crank pumping. He divided his paper into three sections. The first section pointed out the advantages to be gained by close attention to the details of setting and alignment of rod line equipment connected to back cranks of individual pumping units. The second section dealt with proper balancing of loads on the unit when one to four jack wells are pumped from it. Torque on the unit shaft was recommended as a basis for analyzing these loads. Bridges stated it had been shown the best operating condition was attained when the torque curves were smooth, with a minimum difference between low and high torque.

The third section emphasized the savings to be derived from adoption of the Catenary curve principle in pull rod line installations. The two definite economies effected are reduction of friction and elimination of hold-downs in low places. Formulas and examples were given to show the relation between the various factors encountered in the design of sagging rod lines.

In conclusion, Bridges states, "Life of the equipment in back side hookups and rod lines will depend to a great extent on accuracy of alignment and careful attention to details in the original installations; on proper balancing of loads on the unit; reduction of friction as much as possible; and occasional inspection to see that alignment is maintained."

Some very unusual colored moving pictures were shown by C. P. Parsons of Halliburton Oil Well Cementing Company. Two reels showed the advancement of drilling and producing practices in the Gulf Coast district. Of particular interest were the modern drilling barges used in developing properties located in the water-covered regions of South Louisiana.

Sergeant Ranks Sheriff

GOVERNOR MARLAND PLANS CAPITOL DOME FROM OIL

OKLAHOMA CITY.

IT'S the sovereignty of the state versus the courts of the state with sovereign, E. W. Marland, governor and commander-in-chief of the military holding advantage as state officials, city officials and oil producers jockey for position in development of the north end extension of the Oklahoma City field.

Stanley Rogers, Oklahoma County sheriff, went out to the capitol building April 8 with some civil court papers in his pocket. At the edge of the military zone, established by the governor March 31, the sheriff was informed that a military zone existed and that any molestation of the military or serving of papers would be looked upon with disfavor. The sheriff was given permission to go to the capitol as a citizen.

There he learned that the governor was not accepting any service from the courts. Furthermore the information was given out that a guard house had been provided for this military zone and that a high sheriff and his deputy would be clamped behind its bars if they ceased to be other than citizens and produced their court process papers.

Meanwhile workmen continued making ready for the drilling of five wells on the lands around the capitol building while national guardsmen kept a weather eye out for movements that might indicate a procedure of halting the state. It is all a part of the controversy between the state, Oklahoma City and oil producers.

A sergeant of the guardsmen is Knox Garvin, state senator from Duncan, whose bid for the privilege of drilling the state lands was high when these were opened April 3. Holders of leases on private lands adjoining are disgruntled, since they hold the opinion that the senator from Stephens County does not have funds sufficient to pay the $374,000 bonus specified in his bid. They are pointing fingers at one or two oil concerns singled out as backing for the bidder.

These disgruntled producers are under restraint of city officials, as the private property within the city is under a zoning ordinance passed by voters March 24.

City officials contend that even the governor has no authority to go ahead on state lands which are within the city. The answer to that is the military zone and the refusal to accept service to appear in court April 13, when state officials have been cited to appear and show cause why they should not listen to the pleadings of attorneys for the city.

The charge brought by the city is that the state is using the wrong commission in letting bids for drilling the area around the capitol. The State Board of Affairs has been given authority of the area. City officials and oil concerns holding private leases contend that the State School Land Commission is the proper body for handling the leases.

The upshot of it all may be that the city will relent in its restrictions as to drillling and let holders of private leases go unrestrained into the drilling race. When Orval Mosier, city manager, heard of the reception the sheriff had at the governor's office, he said:

"There's no reason for holding the private companies back while the state flouts its own laws."

Such a policy would add several scores of locations to the more than 100 drilling wells, locations, rigs and cellars which now make up the activity that has the capitol building encircled in derricks.

The clash between state and city had its beginning in December, 1935, when British American Oil Company completed Mary Green 1, SE SW SW SW 23-12n-3w. The governor could look out of the window of his official home and see the derrick. At that time only a small part of the city was zoned for drilling in the north extension. Neither was the state prepared. Owners of private property saw royalty checks for the future, provided the city would allow a zone to be declared for drilling. State officials saw additional revenue provided the state lands could be drilled.

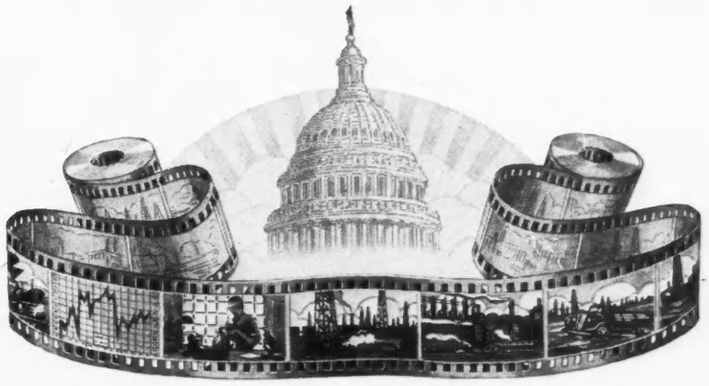
Governor Marland saw a completed dome for the capitol building. That is one of the improvements he wants to make from the $2,000,000 he expects the state to profit from its drilling. Disposition of the funds will be up to the legislature. Item number one is the dome so far as the governor is concerned. He has talked of some new office buildings and also additional funds for soil conservation.

The governor drove the stake for No. 1 state April 6. It was no new activity for him. He made location for his first oil well 42 years ago in Pennsylvania. In speaking of that and of present state drilling in Oklahoma he recounted similarity of experience. The press quoted him:

"I'm running on my face this time just like I did the first time I ever drilled a well. This time it is not hard to run on one's face when the well offsetting the lease will flow 25,000 barrels. A tramp could get the money to drill if he held the lease."

Between the drilling of his first well in Pennsylvania and the starting of his first well for Oklahoma, the governor has been up and down in the oil industry. His venture in Oklahoma became the Marland Refining Company of Ponca City. Its properties are now a part of Continental Oil Company. Marland got into politics and was elected to congress. His bid for governor was a success and now he wants to return to Washington as a senator from Oklahoma.

The Changing Panorama



THE OIL WEEKLY'S COMPOSITE VIEW OF INDUSTRY

Edited by L. J. LOGAN, Associate Editor

SOME doubts and uncertainties have accumulated lately around the picture in oil. The gasoline market has shown some unsteadiness, and the prospects for improvement have been delayed by the unusually late cold weather. Further complicating the situation is the growing anxiety over crude production control at Rodessa, a major flush field that has been causing some concern since oil was found there last summer.

Less Talk of Higher Crude Prices

These and other difficulties have more or less silenced, at least temporarily, the talk that was gathering momentum a few weeks ago over possibility of another moderate crude price increase soon in the Mid-Continent. With the markets for gasoline and other products unsteady instead of rising, and with a major field threatening the market stability, talk of a crude price increase loses much of its plausibility. Instead, a few pessimistic voices are heard to offer the warning: "If they don't watch out at Rodessa, the Mid-Continent crude prices may be cut."

Basic Conditions Encouraging

Nevertheless, those inclined to be optimistic have some good grounds for their attitude. The general economic situation has a strong undertone, and the oil industry's statistical position is especially favorable.

Throughout industry there is increasing evidence that recovery definitely is under way and that the rising trend is likely to continue for some time. Anxiety and fears over governmental policies gradually are being pushed into the background, and more people apparently are being convinced that natural recovery is inexorably in progress, despite any artificial restraints that have been set up.

This expansion of industry and commerce is most pronounced, moreover, in lines directly or indirectly affecting the oil industry. Steel production now is the greatest in nearly six years, and for that circumstance heavy output of automobiles is largely responsible. From the high production and sales of automobiles the oil industry is profiting directly. Gasoline consumption this year has been running at all-time peak proportions.

Oil Industry's Position Strong

Meanwhile, the oil industry continues to occupy a particularly advantageous statistical situation. By long continued restraint of production and imports, above ground stocks of oils have been brought down to the lowest level for about a decade. The control of supply continues generally effective. The balancing of supply with demand finally has led to profitable prices in the various branches of the industry. In the meantime, there has been a steady increase in consumption of petroleum. The oil companies consequently have experienced a noteworthy recuperation of earning power. With only a few exceptions the companies did much better in 1935 than in 1934. Further improvement already has occurred in the opening portion of this year, with prices and volume of business higher than in the corresponding period last year. For many companies 1936 probably will be the most profitable year on record, with exception of 1929. Some concerns possibly may set all time records in earnings this year.

Much Improved Earnings

Although these columns in recent weeks have carried much information on improved oil company earnings, the betterment is further attested by a recent tabulation compiled by Carl H. Pforzheimer & Company, of New York. The report showed that aggregate net income of 20 leading oil companies for 1935 was $158,208,919, or approximately 90 percent more than the $83,308,828 profit in 1934. Every one of the 20 companies showed some profit in 1935, while in the previous year four of them had net losses.

The four companies that emerged to a profit making basis were Barnsdall Corporation, Pure Oil Company, Shell Union Oil Company, and Standard Oil Company of Ohio.

Only three of the 20 companies showed less profit

in 1935 than in 1934. They were: Atlantic Refining Company, Houston Oil Company, and Standard Oil Company of Kentucky. The remaining 17 companies that had better results in 1935 than in 1934 were: Barnsdall Corporation, Consolidated Oil Corporation, Continental Oil Company, Ohio Oil ompany, Phillips Petroleum Company, Pure Oil Company, Seaboard Oil Company, Shell Union Oil Company, Skelly Oil Company, South Penn Oil Company, Standard Oil Company of Ohio, Sun Oil Company, The Texas Corporation, Union Oil Company of California, Socony-Vacuum Oil Company, Standard Oil Company of Indiana, and Mid-Continent Petroleum Corporation.

Better earnings in 1935 were shown also by most other companies, as reported previously in these columns. In addition to the companies included in the above tabulation, improved earnings have been reported by Humble Oil & Refining Company Plymouth Oil Company, Panhandle Producing and Refining Company, British American Oil Company, Ltd., Texas & Pacific Coal & Oil Company, Sunray Oil Corporation, and other companies.

Clamor Over Rodessa Subsides

Despite the recent hullabaloo over Rodessa proration, there is strong hope that the field will not be allowed to upset the market stability. Louisiana authorities had given a producing company permission to produce certain wells at a comparatively high rate and to supply the oil to a lately completed pipe line leading to a Longview, Texas, refinery. Texas producers loudly protested the contemplated movement of Rodessa crude into Texas. There were threats of mass meetings and requests for investigations. Senator Connally of Texas, author of the Connally Act against interstate shipping of oil produced in violation of state regulations, carried to the Department of Interior a protest against reported usurpation of Texas markets by Louisiana production. There was further clamor for creation of another federal tender board, similar to that regulating oil shipments out of East Texas. Appeals to the federal government were, of course, rather pointless. For the federal government can only supplement proration by the states, preventing interstate shipping of oil that is contraband within the state. In the Rodessa case, the state authorities had fixed a special, high allowable, and oil produced within that allowable would have been free to move interstate.

Threat Apparently Not Serious

The whole difficulty was eliminated long before the clamor subsided, when the Louisiana officials issued a new order which in effect rescinded the special order. The producer involved immediately cut back production within the regular allowables for the field. The contemplated oil movement into Texas did not materialize.

When some of the noise had subsided, members of the Texas Railroad Commission indicated they did not have fears Rodessa crude would usurp the Texas markets. The chairman of the Texas commission, Colonel Ernest O. Thompson, reiterated that Texas and Louisiana are cooperating closely in regulation of the Rodessa field. The Louisiana authorities have welcomed the cooperation of the Texas officials.

Special Allowable Cancelled

Under an executive order of Governor Noe of Louisiana, prompted by the above discussed special permit, Louisiana producers henceforth must produce according to the regular allowables of the conservation department. In effect, the mentioned special allowable was cancelled.

Under an order issued by the Louisiana Conservation department April 2, the state allowable was fixed at 202,000 barrels daily during April, and the Rodessa allowable at 350 barrels daily per well. (The Texas Railroad Commission later fixed the same allowable for the several Rodessa wells within the Texas border).

Louisiana Ignores Bureau Advice

Although the Louisiana officials assumed a stricter attitude toward Rodessa, they still were being criticized within the several other leading oil producing states for failure to adhere more closely to the recommendations of the Bureau of Mines in fixing allowables. All the other leading oil states are endeavoring to stay approximately within the bureau recommendations, and their efforts are being rewarded with noteworthy success. In contrast, Louisiana allowables have been fixed consistently at levels substantially higher than the federal allocations, and Louisiana at present is accounting for a large proportion of all the national excess above the bureau's advice.

Gasoline Demand Retarded

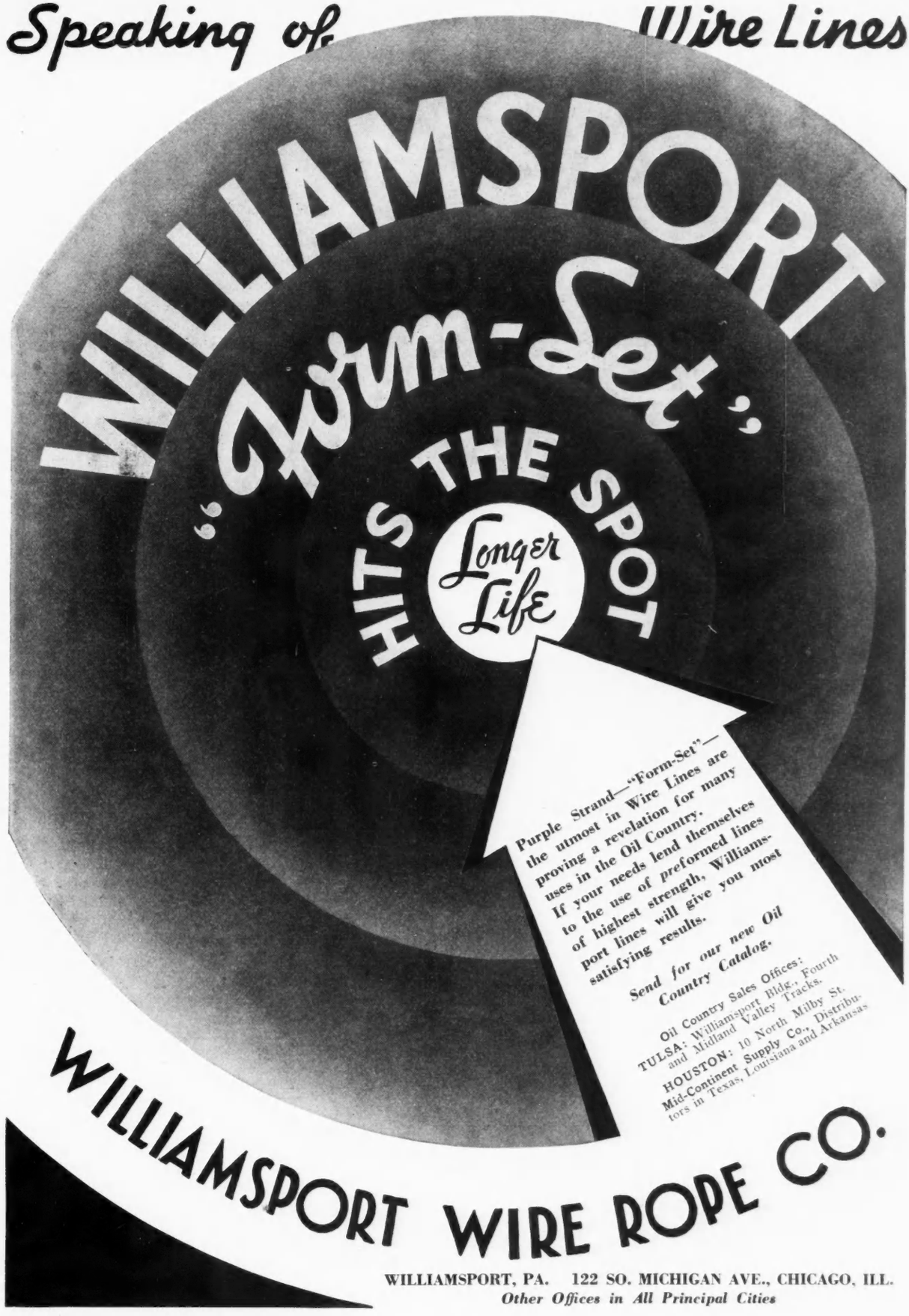
Gasoline demand failed during February to show the usual gain above a year ago. The Bureau of Mines reported that the domestic demand for motor fuel in the 29 days of February totaled 945,000 barrels, compared with 944,000 barrels in the 28 days of February last year. Absence of an increase was due to unfavorable weather and the exceptionally heavy shipments in January.

Gas Case to Be Appealed

The Texas Railroad Commission's attorneys will appeal to the United States Supreme Court in the case in which a federal district court recently ruled against the commission's ratable taking orders under the Texas gas conservation law. The court sustained the argument that the commission orders requiring companies to take gas ratably from Panhandle producers violated the due process clause of the constitution. The plaintiffs contended that the commission, by forcing them to purchase ratably, in effect compelled them to divide their markets. Pending final determination of the litigation, the railroad commission expects to issue orders as usual in its gas conservation program.

Markets Are Slow

The oil industry's markets lately have been slow. Belated cold weather and wet fields have curbed the demand for gasoline and kerosene. Prices remained about the same during the past week. In Texas the retail markets are depressed, reflecting the influence of hot oil from East Texas that cannot be moved except within the state. Federal authorities prevent interstate movements, under the Connally Act.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February Down

BUREAU REPORT SHOWS GOOD CONTROL OF OUTPUT

WASHINGTON, D. C.

DOMESTIC production of crude oil in February totaled 82,120,000 barrels which, while a decrease of 6,700,000 barrels from the January production of 88,820,000, was an increase of 9,357,000 barrels over the February, 1935, output of 72,763,000 barrels, it is shown by the monthly report issued April 8 by the Bureau of Mines.

The February decline was due not only to be the shorter month but to a decrease in daily average production from 2,865,000 barrels in January to 2,832,000 barrels in February. The daily average, however, was 273,000 barrels above the February, 1935, figure of 2,599,000 barrels, it was stated.

A material decrease in California output was a feature of the month, the bureau commented. Running above 650,000 barrels a day since last September, the first reduction through curtailment efforts was noticeably successful in February when daily average dropped from 680,100 barrels to 578,400 barrels.

The California decline, however, was largely offset by a gain in Texas production from 1,066,400 barrels in January to 1,124,100 barrels a day in the following month. Louisiana set a new record daily average at 189,800 barrels, of which Rodessa contributed 37,000 barrels from about 75 wells.

Increased crude runs were reflected in the trend of crude-oil stocks, the bureau reported, the withdrawal increasing from 1,550,000 barrels in January to 2,269,000 barrels in February. At the end of the month stocks of refinable crude totaled 310,812,000 barrels.

The effect of heavy demand for fuel oil on the yield of gasoline was again pronounced, the report continued, and although the average of 42.9 percent in February was slightly above the January average, it was considerably below normal.

Daily average domestic demand for motor fuel during the month was 945,000 barrels, compared with 944,000 barrels for February, 1935. The failure of demand to show its usual gain over a year ago was attributed to the unfavorable weather which prevailed during the greater part of the month and the unusually heavy shipments in January. Exports of motor fuel declined materially, but remained considerably above the level of a year ago.

"The increase in motor-fuel stocks in February was, despite the short month, the largest in history," the bureau commented. "Stocks of finished and unfinished gasoline rose from 62,613,000 barrels on Januay 31 to 71,604,000 barrels on February 29. Considering the increase in natural-gasoline stocks, the net gain was more than 9,000,000 barrels."

Details of the month's activities, compared with January, 1936, and February, 1935, are shown in the accompanying table.

Supply and Demand of All Oils

(Thousands of barrels of 42 gallons)

	February, 1936	January, 1936	February, 1935	Jan.-Feb., 1936	Jan.-Feb., 1935
New Supply:					
Domestic production:					
Crude petroleum	82,120	88,820	72,763	170,940	151,478
Daily average	2,832	2,865	2,599	2,849	2,567
Natural gasoline	3,196	3,653	2,952	6,849	6,238
Benzol[1]	174	186	148	360	295
Total production	85,490	92,659	75,863	178,149	158,011
Daily average	2,948	2,989	2,709	2,969	2,678
Imports[2]:					
Crude petroleum:					
Receipts in bond	346	27	773	373	1,322
Receipts for domestic use	2,280	1,848	1,130	4,128	2,592
Refined products:					
Receipts in bond	943	1,115	812	2,058	1,784
Receipts for domestic use	602	573	974	1,175	2,075
Total new supply, all oils	89,661	96,222	79,552	185,883	165,784
Daily average	3,092	3,104	2,841	3,098	2,810
Decrease in stocks, all oils	[3]1,583	365	[3]2,922	[3]1,218	[3]4,153
Demand:					
Total demand	88,078	96,587	76,630	184,665	161,631
Daily average	3,037	3,116	2,737	3,078	2,740
Exports:					
Crude petroleum	3,474	3,067	2,804	6,541	5,173
Refined products	5,378	7,095	3,830	12,473	10,241
Domestic demand:					
Motor fuel[4]	27,401	32,553	26,432	59,954	54,494
Kerosene	4,785	5,569	4,597	10,354	8,896
Gas oil and fuel oil[5]	38,132	38,682	30,735	76,814	65,324
Lubricants	1,520	1,396	1,297	2,916	2,854
Wax	85	89	64	174	133
Coke	644	699	593	1,343	1,295
Asphalt	878	697	612	1,575	1,204
Road oil	100	141	124	241	280
Still gas	3,833	4,102	3,513	7,935	7,321
Miscellaneous	179	169	163	348	366
Losses[4, 5]	1,669	2,328	1,866	3,997	4,050
Total domestic demand	79,226	86,425	69,996	165,651	146,217
Daily average	2,732	2,788	2,500	2,761	2,478
Stocks:					
Crude petroleum	310,812	313,081	337,319	310,812	337,319
Natural gasoline	4,218	3,936	4,781	4,218	4,781
Refined products	227,888	224,318	226,201	227,888	226,201
Total, all oils	542,918	541,335	568,301	542,918	568,301
Days' supply	179	174	208	176	207

[1]From Coal division. [2]Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. [3]Increase. [4]Beginning January, 1936, natural gasoline losses are included in motor fuel demand; the 1935 figures will be placed on a similar basis later. [5]Net transfers of heavy crude in California included in fuel-oil demand.

INDIAN AUCTION

Restricted Oklahoma lands offered April 22

MUSKOGEE, OKLA.

RESTRICTED Indian lands situated in 20 Oklahoma counties will be offered for oil and gas lease at public auction April 22, by the Five Civilized Tribes, according to an announcement by A. M. Landman, superintendent of the agency here. The total of 171 tracts to be offered comprise 14,757.521 acres of which 6,478.72 acres are in 87 tracts located in four southern counties. Jefferson County, principally by virtue of interest in the area west and southwest of the old Healdton pool, heads the offering with a total of 2,520.36 acres in 32 tracts and Carter County is second with 2,271.05 acres in the same number of tracts. Lease play in township 5s, ranges 1, 2, and 3w has been steady for many weeks due to the large block of Carter Oil Company and upon which it is rumored a test will be started soon. The counties, number of tracts and acreage involved in the coming auction are as follows:

COUNTY	No. of Tracts	Acreage
Atoka	15	1,320.00
Carter	32	2,271.05
Creek	3	280.00
Garvin	5	399.80
Grady	2	140.00
Hughes	17	1,619.24
Jefferson	32	2,520.36
Johnston	1	210.00
Love	19	1,482.34
McClain	1	90.00
McIntosh	4	512.78
Okfuskee	18	1,903.09
Okmulgee	2	100.00
Pittsburg	6	760.00
Pontotoc	3	330.00
Seminole	5	379.11
Stephens	4	205.00
Tulsa	1	159.751
Wagoner	1	5.00
Washington	1	70.00
Total	171	14,757.521

MEN IN THE INDUSTRY'S NEWS

FRANK H. DUNN, who has been in charge of refineries and purchases for H. F. Wilcox Oil & Gas Company, was elevated to the position of executive vice president in a meeting of stockholders held in Tulsa on Tuesday morning, April 7. He succeeds George A. Dye, one of the founders of the company, who has resigned to become an independent operator. Dunn was also elected to the board of directors. J. C. Clover, superintendent of production; Alvin Chapman, superintendent of the land department; Harold B. Ward, purchasing agent; and Carl L. Miller, secretary and assistant treasurer, all of Tulsa, were elected to the board of directors. Other officers re-elected were Homer F. Wilcox, president; Melvin P. Appleby, vice president and treasurer; Horace B. Clay, general counsel; and J. L. Keith, assistant secretary; all of Tulsa; and J. Edward Horn, Phillipsburg, Pennsylvania; A. D. Dillenbeck, New York; Howard Babcock, Buffalo, N. Y.; Frank Winters, Williamsport, Pennsylvania; Frank Hagenberg, Chicago; and Harry H. Gillpatrick, Kansas City, Missouri, directors.

E. FLOYD MILLER, chief geologist for Bay Oil Corporation of Houston, will return at an early date to make his home and headquarters in Tulsa. Bay Oil Corporation headquarters were moved from Tulsa to Houston in 1935. What the company's plans are in transferring Miller back to Tulsa has not been announced but it is rumored that headquarters will be returned to Tulsa.

C. H. WRIGHT, president, and Luther White, head of the land and geological departments of Sunray Oil Company, accompanied a group of eastern stockholders of the company on an inspection tour of the Oklahoma City district during the latter part of the week. The group included R. S. Reynolds, Russel McGuire, Charles W. Lewis and Edwin Shapiro, all of Reynolds & Company, an investment banking firm in New York.

FRANK PRYOR, president of Stanolind Oil & Gas Company, was a business visitor in Denver during the week.

H. G. McLEAN, comptroller and credit manager for Empire Oil & Refining Company, left Tulsa during the week for New York, from which point he will sail for a six-weeks' vacation in the Canal Zone and Central America. He will return by way of the Pacific Coast and spend two weeks in California before returning to Tulsa.

M. B. HEINE, purchasing agent for Phillips Petroleum Company, is concluding a series of trips which have taken him to company properties in a large number of districts.

N. A. C. SMITH, superintendent of the Petroleum Experiment Station, United States Bureau of Mines, Bartlesville, Oklahoma, has returned to his office after an illness of several weeks.

WATSON H. MONROE, junior geologist of the United States Geological Survey, who prepared Bulletin 831-A of the survey on the Jackson gas field, has returned to Jackson to complete his research work in the area and will remain at Jackson until June.

C. A. RUSSELL effective April 16, will join Pan American Production Company, Houston, as general superintendent of production. He has been vice president of Republic Production Company, being in charge of the land, geophysical and geological department.

GEORGE O. SUMAN, who has been in the employ of Associated Oil Company in the San Joaquin Valley, California, for a number of years, recently was appointed superintendent of the San Joaquin Valley division, and F. M. Watkins has been named assistant. The new division was formed by combining all operations of the company in the Valley under one head.

L. E. FOUST, formerly superintendent of Associated Oil Company's Kern, Midway, McKittrick and Lost Hills division in California, has been assigned to special duties in the company's land department with headquarters at San Francisco. This division is now a part of the new San Joaquin Valley division, with George O. Suman as superintendent.

FREDERICK G. CLAPP, consulting geologist, New York City and Bronxville, N. Y., returned home after a three weeks' professional trip in Louisiana ending in March and will shortly leave again on another brief trip of about the same duration in the Middle West.

W. K. ATCHESON, head of the motor transportation department in the southwestern division of The Pure Oil Company, and former president of the Petroleum Motor Transport Association of Oklahoma, has returned to headquarters in Tulsa after visiting the general offices in Chicago.

K. H. CLOUGH was the speaker at the Houston Geological Society's weekly meeting April 9, discussing the physical properties of oil sands.

L. A. BAKER, chief engineer of Mexican Sinclair Oil Corporation at Tampico, Mexico, is in the United States on a vacation trip.

KARL CONWAY of the executive offices of Gulf Oil Corporation at Pittsburgh has been visiting the Houston offices of the company during the past week.

R. P. WARREN, C. H. Carlisle and R. Briggs, geophysicists of Humble Oil & Refining Company, who have been in Mexico for three months, engaged on seismograph work for Huasteca Petroleum Company (Standard Oil Company of New Jersey), have returned to Houston.

JACK WILLIFORD, engineer for the Texas Railroad Commission in the East Texas field, has been elevated to division petroleum engineer. He succeeds R. L. Marek, who recently resigned to go to Tulsa with Stanolind Oil & Gas Company as an engineer in the proration department.

R. J. MacFARLAND, assistant sales manager for the Gardner-Denver Company, has returned to headquarters in Quincy, Illinois, following a tour of Mid-Continent and Gulf Coast areas. He was accompanied on the trip by M. F. Ryan, Tulsa district sales representative.

PREBEN OLDENBURG, petroleum engineer for Shell Petroleum Corporation in the West Texas-New Mexico district, has resigned to accept a similar position with The California Company in the same district with headquarters at Midland, Texas. He graduated in 1923 from the Massachusetts Institute of Technology, and entered the services of the former concern shortly thereafter.

R. C. STONER, vice president and general manager of production for Standard Oil Company of California and The California Company, a producing subsidiary, spent the past two weeks inspecting the latter's holdings in Texas. He plans to visit Mexico City before returning to headquarters at San Francisco.

H. J. STRUTH, former refinery allocator for Gulf Coast Region 5-D when the oil code was in force, has been engaged as statistician for the Texas Division of the Mid-Continent Oil & Gas Association, Dallas.

O. D. DONNELL, president of Ohio Oil Company, Findlay, Ohio, headed a group of officials that spent three days in conference in Fort Worth the past week. Others in the party included: E. B. Redpath, secretary of Ohio Oil Company, Findlay; W. W. Fleming and L. B. McCammon, president and vice president, respectively, for Marathon Oil Company, and Ross C. Gwilliam, attorney, all of Tulsa.

J. O. FERGUSON, 65 years old, employe in the claim department of Sinclair Prairie Oil Company, died in a Tulsa hospital April 7 as the result of a paralytic stroke suffered two weeks previously. During the administration of President Woodrow Wilson he had served as postmaster at Independence, Kansas, having previously served as an instructor in the public schools there for many years and at one time as a member of the board of education. He joined the old Prairie Oil & Gas Company in 1920, and in 1932, when that company was merged with the Sinclair interests, he was transferred to Tulsa.

FRED D. OILER, oil producer and lawyer, died in Tulsa, April 6, following an illness of a year. He came to Tulsa in 1910 from New York, where he had been practicing law. His oil holdings were in the Okmulgee territory and in Pennsylvania, his native state.

Short Gas Course

PROGRAM COMPLETED FOR SOUTHWESTERN SCHOOL

NORMAN, OKLA.

ENCOURAGED by an enrollment of 575 men from the oil industry last year, the College of Engineering, University of Oklahoma, announces a more complete course for April 21, 22 and 23, open to members of the industry interested in study of problems pertaining to the measurement and regulation of dry and casinghead gas. Registration fee will be three dollars.

The course, known as the Southwestern Gas Measurement Short Course, will be conducted by faculty members of the College of Engineering and men from gas companies, with the exception of classes devoted to fundamental principles, which will be conducted by engineers from companies manufacturing equipment. Morning sessions will be held in the auditorium of the College of Engineering. Special classrooms are assigned for afternoon sessions.

University of Oklahoma will be assisted in putting on the course by the Corporation Commission of Oklahoma, Oklahoma Utilities Association, Natural Gas Department of the American Gas Association, and the Natural Gasoline Association of America.

Program for the Twelfth Annual Gas Measurement Short Course follows:

April 21—Morning Session

8:00 to 9:30—Registration and inspection of equipment exhibits.

9:30 to 11:30—General assembly, R. D. Turner, Skelly Oil Company, chairman of Meter School committee, presiding.

Introduction of Dr. Bizzell by C. A. Breitung, president of Oklahoma Utilities Association.

Address of welcome by Dr. William Bennett Bizzell, president of University of Oklahoma.

Introduction of Meter School committee, by R. D. Turner.

"Natural Gasoline Association and the Gas Measurement Short Course," by W. F. Lowe, secretary Natural Gasoline Association of America.

"Natural Gas Department of American Gas Association and the Gas Measurement Short Course," by Captain A. E. Higgins, secretary of the department.

Address by L. B. Denning, Sr., president of Lone Star Gas Company and of American Gas Association.

Report of Committee for study of practical methods, presided over by Ray L. Rountree of United Gas Public Service Company.

April 21—Afternoon Sessions

Period I—1:00 to 2:00:

A. "Domestic Meters," American Meter Company, Room 100 S. E.

B. "Large Capacity Displacement Meters," Pittsburgh Equitable Meter Company, W. R. McLaughlin, Room 104 S.

C. "Westcott Orifice Meters," American Meter Company, Room 209.

D. "Functions of Field Meter Men," George Greiner, Phillips Petroleum Company, Room 300.

E. "Problems of Elementary Gas Laws," E. F. Dawson, University Faculty, Room 211.

F. "Fisher Regulators," Charles D. Peterson, Fisher Governor Company, Room 307.

Period II—2:00 to 3:00:

A. "Orifice Meters," A. D. MacLean, Pittsburgh Equitable Meter Company, Room 307.

B. "Large Capacity Displacement Meters," American Meter Company, Room 100 S. E.

C. "Low Pressure Regulators," W. J. McArt, Pittsburgh Equitable Meter Company, Room 104 S.

D. "Calculation of Orifice and Displacement Meter Charts," M. M. Farley, Panhandle Eastern Pipe Line Company, Room 300.

E. "Field Testing of Large Capacity Displacement Meters," E. C. McAnnich, Oklahoma Natural Gas Company, Room 211.

F. "Recording and Controlling Instruments Applicable to Gas Measurement and Regulation," E. H. Triphaus, Taylor Instrument Company, Room 209.

Period III—3:00 to 4:00:

A. "Low Pressure Regulators," American Meter Company, Room 100 S. E.

B. "Domestic Meters," H. A. Kahler, Sprague Meter Company, Room 302.

C. "Foxboro Orifice Meters," L. K. Spink, Foxboro Company, Room 303.

D. "Operation of Calorimeter," S. H. Cromer, University Faculty, and C. N. Arnold, Cutler Hammer Company, Room 307.

E. "Emco McGaughy Integrator," J. L. Cottrell, Pittsburgh Equitable Meter Company, Room 209.

F. "Well Capacities," E. M. Tignor, Cities Service Gas Company, Room 300.

April 22—Morning Sessions

8:00 to 9:00—Equipment exhibits.

9:00 to 9:45—General assembly in auditorium, R. D. Turner presiding.

"Fundamental principles of Regulators," A. D. MacLean.

10:00 to 10:45—"Fundamental Principles of Orifice Meters," L. K. Spink.

11:00 to 11:45—"Fundamental Principles of Displacement Meters," John C. Diehl, assisted by A. F. Benson, American Meter Company.

April 22—Afternoon Sessions

Period I—1:00 to 2:00:

A. "Determination of Hydrogen Sulphide Content of Gases," Dr. F. V. L. Patten, Texas Railroad Commission, Room 300.

B. "Foxboro Orifice Meters," L. K. Spink, Room 302.

C. "Domestic Meters," W. R. McLaughlin, Room 104 S.

D. "Westcott Orifice Meters and Rate Volume Control," American Meter Company, Room 100 S. E.

E. "Chaplin-Fulton Regulators," Thomas H. Thorn, Chaplin-Fulton Company, Room 211.

F. "Problems of Wet Gas Measurement and Regulation," a round table discussion headed by G. W. McCullough, Phillips Petroleum Company, and R. D. Hanley, Magnolia Petroleum Company, Room 303.

Period II—2:00 to 3:00:

A. "Domestic Meters," American Meter Company, Room 100 S. E.

B. "Problems of Elementary Gas Laws," E. F. Dawson, University Faculty, Room 303.

C. "Bell Prover Operation," A. D. MacLean, Room 104 S.

D. "Automatic Demand Control of Distribution Pressures," C. L. Bryan, Foxboro Company, Room 211.

E. "Care and Operation of Orifice Meters," K. I. Snyder, Arkansas Louisiana Gas Company, Room 209.

F. "Reynolds Regulators," Ralph C. Hughes, Reynolds Gas Regulator Company, Room 307.

Period III—3:00 to 4:00:

A. "Meter Shop Practice," Pat Davis, San Antonio Public Service Company, Room 303.

B. "Large Capacity Displacement Meters and Regulators," L. Fairchild, Sprague Meter Company, Room 302.

C. "Large Capacity Displacement Meters," W. J. McArt, Room 104 S.

D. "Bell Prover Operation and Critical Flow," American Meter Company, Room 100 S. E.

E. "Problems of Regulator Freezing," M. A. Hardie, Jr., Montana Power Gas Company, Room 300.

F. "Calculation of Orifice and Displacement Meter Charts," M. M. Farley, Room 307.

G. "Reconditioning of Mercury and Gravity Balance," H. F. Goodenough, Refinery Supply Company.

Period IV—4:00 to 5:00:

Inspection of laboratories, featuring fluid meter tests sponsored by the American Society of Mechanical Engineers, and regulator freezing problems sponsored by American Gas Association.

Annual Banquet at 6 p.m., University Union Ballroom.

April 23—Morning Sessions

8:00 to 9:00—Equipment exhibits.

9:00 to 12:00—General assembly in auditorium, R. D. Turner presiding.

Announcement of prize papers.

"Public Relations as It Pertains to the Meter Man," by E. M. Meyers, Oklahoma Corporation Commission.

Address by J. F. Owens, president of Oklahoma Gas & Electric Company.

"Action of Carbohydrates in Natural Gas Lines," by W. M. Deaton, U. S. Bureau of Mines.

April 23—Afternoon Sessions

Period I—1:00 to 2:00:

A. "Determination of Line Losses." High pressure lines will be handled by E. C. Chaney, Cities Service Gas Company, and low pressure lines will be handled by John R. Bird, United Gas Public Service Company, Room 300.

B. "High Pressure Regulators," American Meter Company, Room 209.

C. "Automatic Demand Control of Distribution Pressures," C. L. Bryan, Room 211.

D. "Large Capacity Displacement Meters," American Meter Company, Room 104 S. E.

E. "Intermitters," Hanlon Waters Company, Room 302.

Period II—2:00 to 3:00:

A. "Chaplin-Fulton Regulators," Thomas H. Thorn, Room 209.

B. "Problems of Elementary Gas Laws," E. F. Dawson, Room 303.

C. "High Pressure Regulators," W. R. McLaughlin, Room 104 S.

D. "Domestic Meters," W. J. McArt, Room 307.

E. "Reynolds Gas Regulators," Ralph C. Hughes, Room 211.

F. "Intermitters," Charles D. Peterson, Room 302.

Period III—3:00 to 4:00:

A. "Domestic Meters," H. A. Kahler, Room 209.

B. "Gravitometers," H. F. Goodenough, Room 211.

C. "Low Pressure Regulators," A. D. MacLean, Room 104 S.

D. "Operation of Slide Rule and Gas Rule," H. V. Beck, University Faculty, Room 307.

MEET AT NORMAN

A.I.M.E. chapter will join with students

NORMAN, OKLAHOMA.

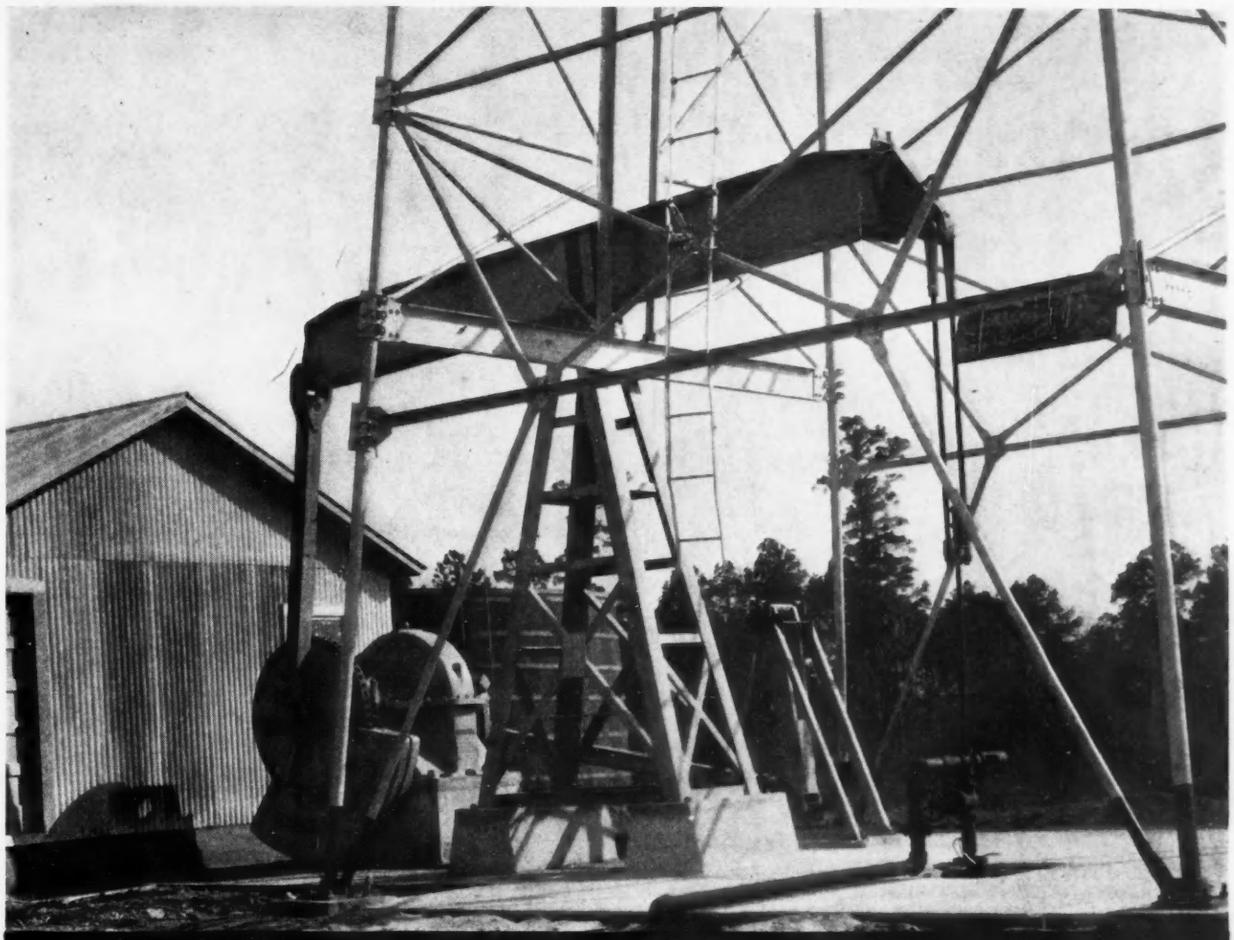
THE Mid-Continent Section, American Institute of Mining and Metallurgical Engineers and the Petroleum Engineers' Club, The Student Chapter of the University of Oklahoma, will hold a joint meeting here on Saturday afternoon, April 18, at which time three papers will be presented. The technical meeting will be held in the Engineering Building, commencing at 4:15 p. m. and followed by an informal dinner to be held in the Union Building at 6:30 p. m. The program includes:

"Modern Shooting Methods," by Paul F. Lewis, Explosives Department, American Glycerine Division, E. I. du Pont de Nemours and Company, Inc.

"Modern Production Methods" by M. L. Haider, Carter Oil Company.

"Duties of the District Engineer" by H. H. Power, Gulf Oil Corporation and past chairman of the Petroleum Division of A. I. M. E.

May 19 is the date tentatively set for the annual meeting of the Mid-Continent Section of the Institute. John M. Lovejoy, president of the Institute, is to be the guest of honor.



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With conservatively rated National Type H Gears and Type H Back Crank Pendulum, these assemblies assure most satisfactory back crank pumping installations.

THE NATIONAL SUPPLY COMPANY

National

Controlled Power

makes the FWD most dependable for all around Oil Field Service!

CONTROLLED POWER summarizes the many advantages of the FWD Truck . . . and it is precisely the reason for the enviable performance records which the FWD Truck has made in the oil fields.

In every branch of this big industry, the FWD Truck serves with the same dependability, economy, and safety . . . Its rugged construction, its reserve power, and its principle of four-wheel-drive give it positive traction on poor roads, hills, fields, and through the mud and sand . . . For all around service, the FWD Truck is most dependable . . . Use it for general trucking . . . for carrying and operating oil-well cementing outfits, tubing hoists, spudding devices, and even portable drilling units.

Let us give you full details of FWD Controlled Power.
Also write for copy of the new FWD Safety book.

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THE FOUR WHEEL DRIVE AUTO CO.
CLINTONVILLE, WISCONSIN
***Canadian Factory,* KITCHENER, ONTARIO**

TRUCKS
1½ TO 15 TONS

5 STEPS TO UNMATCHED TRUCK PERFORMANCE » » »

1. GREATER SAFETY. Front axles are set back, resulting in **power,** as well as load being distributed to all four wheels. This gives the FWD sure footing on slippery pavements, in congested traffic, and when going around curves.

2. GREATER DEPENDABILITY OF SERVICE. Reserve power, rugged construction throughout, and true application of the four-wheel-drive principle, insure continuous operation under any condition. Backed by a nation-wide organization of parts depots and service men available at a moment's notice.

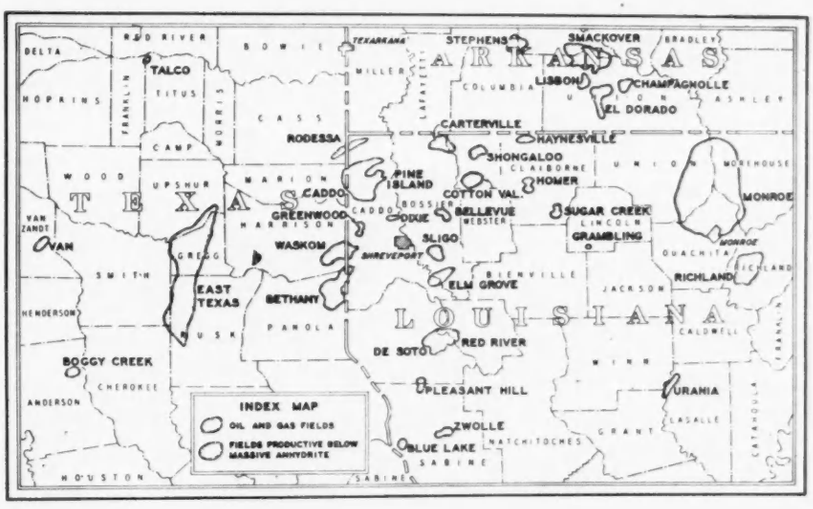
3. FASTER SERVICE. FWDs, with their powerful engines, wide range of gear ratios and four-wheel traction cut down trip time by being able to "make" the hills, curves, and poor going, faster than average trucks. No necessity for overspeeding on the straight stretches.

4. WIDER RANGE OF OPERATION. Four-wheel traction enables the FWD to handle its regular hauling job easily and do the tough jobs as a matter of course.

5. OPERATING ECONOMY. Definite savings are made in gasoline, tire wear, maintenance cost, and other "out-of-pocket" expenses. This is the result of equal distribution of power, load, and scientific four-wheel-drive construction throughout.

CONTROLLED POWER ON AND OFF CONCRETE

FIGURE 1



By JOHN S. IVY
United Gas Public Service Company
Houston, Texas

The Rodessa Field

THE Rodessa field was discovered August 3, 1930, by the completion of R. W. Norton's Hill 1 as a gas well at 5505 feet. Previously numerous wells had been drilled on the structure by other operators but none reached a sufficient depth to penetrate the Basal Anhydrite reservoirs, which had been productive of oil and gas at Pine Island and Cotton Valley, and gas at Sligo, Sugar Creek, and Bethany.

After the completion of the discovery well, the field was developed for gas until July 7, 1935, when the discovery oil well was completed by United Gas Public Service Company on the I. L. Young lease at a depth of 6048 feet. At that time 20 gas wells had been drilled and completed in the field, proving its linear extent for about six miles. As of April 1, 1936, 120 oil wells had been completed in the field and approximately 4,689,000 barrels of oil produced. As of the same date there were about 62 active locations. At the present time about 6500 acres may be regarded as proved for oil and gas production and an additional 3500 acres for the production of gas.

Prior to the discovery of gas in the horizon immediately underlying the anhydrite the Rodessa field was generally not believed to be potential for production due to the absence of accumulation of either oil or gas in the reservoirs of the Upper Cretaceous formations such as the Nacatoch, Chalk, and the Buckrange, which formations had been productive in the closely adjacent Caddo field and Pine Island field, as well as in other fields of Northern Louisiana and Southern Arkansas.

Figure 2 is a structure map of the field. The accumulation of oil and gas occurs on the upthrown side of the Rodessa fault, which extends in a northeast-southwesterly direction from southwest Arkansas through the northwesternmost corner of Louisiana, and thence into Texas. The surface trace of the fault extends through a point just north of the town of Ida, Louisiana, to a point immediately south of the townsite of Rodessa, and continues on through Cass County into the western portion of Marion County, Texas, where it crosses the Texas and Pacific railroad a short distance north of the town of Jefferson. The total known extent of the surface fault is approximately 40 miles. In the vicinity of Rodessa, Louisiana, this fault displaces the formations of the Comanchean series about 500 feet. The displacement in the Upper Cretaceous is only about 200 feet.

The presence of comparatively minor displacements both parallel to and at angles with the major line of faulting is indicated by surface and subsurface evidence, together with seismic data. Some of these displacements

THE Rodessa field was discovered August 3, 1930, and the discovery oil well completed July 7, 1935. April 1, 1936, there were 120 oil wells and 20 gas wells in the field. As of the same date, 4,689,000 barrels of 43 gravity paraffin base oil had been produced. About 6,500 acres are proved for oil.

The accumulation of oil and gas occurs on the upthrown side of the main Rodessa fault in horizons underlying the Massive Anhydrite member of the Glen Rose formation at a depth of about 6000 feet. The structure is typically fault-line in type.

Wells are drilled with heavy-duty rigs and completed in about 45 days. Principal drilling difficulties encountered are sticking and twisting-off of drill pipe, "wash-outs", and the sticking of casing and liners.

The principal production problem is that of excessive gas-oil ratios, due to the failure to land and cement the production string below the gas-oil contact which occurs at a subsea depth of about —5725 feet.

This paper was presented at the Spring Meeting of the Southwestern District of the American Petroleum Institute Division of Production, held in Shreveport, Louisiana, on April 9 and 10, 1936.

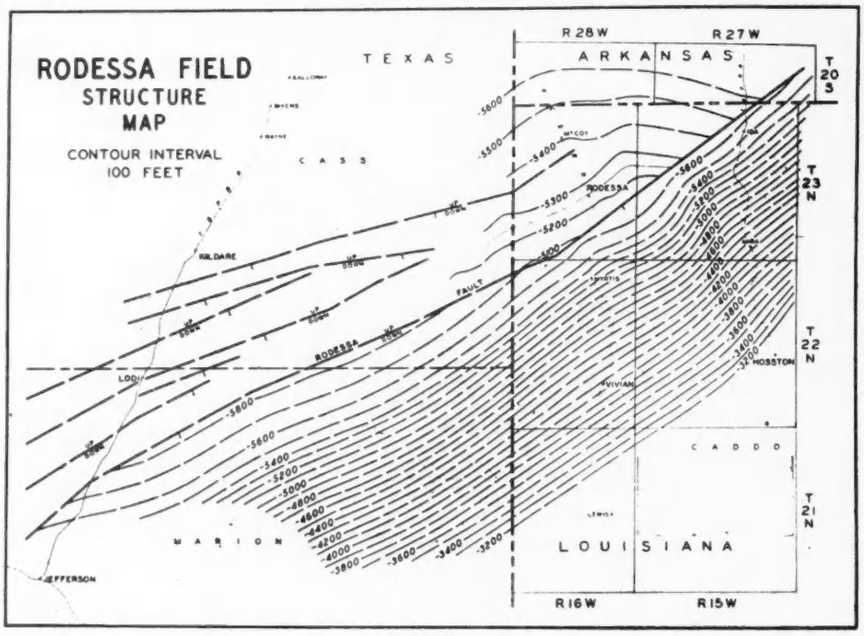


FIGURE 2

are of such a minor nature that they apparently do not interrupt the continuity of the reservoirs but do affect the areal extent of the productive zones. Further development is required to determine what effect the faulting shown on the structure map in southern Cass and northern Marion Counties, Texas, will have on oil and gas accumulation.

The contours delineate the structural attitude of the base of the Massive Anhydrite member of the Glen Rose formation of the Comanchean series and indicate a northern dip of about 100 feet per mile. Present data indicate a maximum closure to the north of about 500 feet.

Figure 3 is a generalized cross section of the Louisiana portion of the structure, approximately at right angles to the major fault. Wells located in the oil belt start in the Sparta sand formation of the Claiborne, the thickness of which varies from about 100 to about 300 feet, dependent upon both topographic and structural location. The Cane River formation, which underlies the Sparta sand, consists of brown clays and unconsolidated gray sands in the upper part and green sands and marls in the lower portion. It has a total thickness of approximately 250 feet. The Wilcox formation is next penetrated and consists primarily of gray clays and sands containing occasional lenses of sand firmly cemented with calcium carbonate which are sometimes referred to by the driller as boulders. This formation has a thickness of about 350 feet. The Midway formation underlying the Wilcox has a thickness of about 600 feet and is the basal member of the Eocene group. It consists of dark gray clays and shales with occasional sideritic lenses which are usually referred to as boulders.

Immediately underlying the Midway and disconformable to it, is the Arkadelphia formation of the Upper Cretaceous. Lithologically, this formation consists of calcareous gray shale and chalk, having an approximate thickness of 150 feet. The upper portion of the Nacatoch formation which is next penetrated consists of thin beds of fossiliferous limestone interbedded with gray marls. The total thickness of this formation is about 435 feet. Beneath the Nacatoch the bit penetrates about 50 of Saratoga Chalk and then about 175 feet of marl and gray chalky shale, which sometimes develops locally into chalk. The latter formation is referred to as Marlbrook Marl.

Below the Marlbrook Marl occurs the Anonna Chalk which is correlative with the Pecan Gap chalk of Texas. The formation consists of chalk and marl and has a thickness of about 275 feet. The Ozan formation occurs below the Anonna chalk and is composed of shale and sandy shales with occasional lenses of gray sand which are sometimes well cemented. Its thickness is approximately 160 feet.

The Buckrange Sand, commonly referred to as the Blossom Sand, comprises about 60 feet of consolidated and unconsolidated sand. The Brownston formation underlying the Buckrange is composed of about 370 feet of brown and gray shale with occasional lenses of sandy shale and sand.

The Tokio formation, which normally underlies the Brownston is apparently missing in that portion of the Rodessa field that has received development. The Woodbine formation, normally the basal member of the Upper Cretaceous, is also not present in the field unless it occurs well down on the flanks of the structure. Consequently, it is presently believed that the wells drilled adjacent to the fault pass directly from beds of Brownston age into the limestone and sandy limestones of the Washita-Fredericksburg group of the Comanchean se-

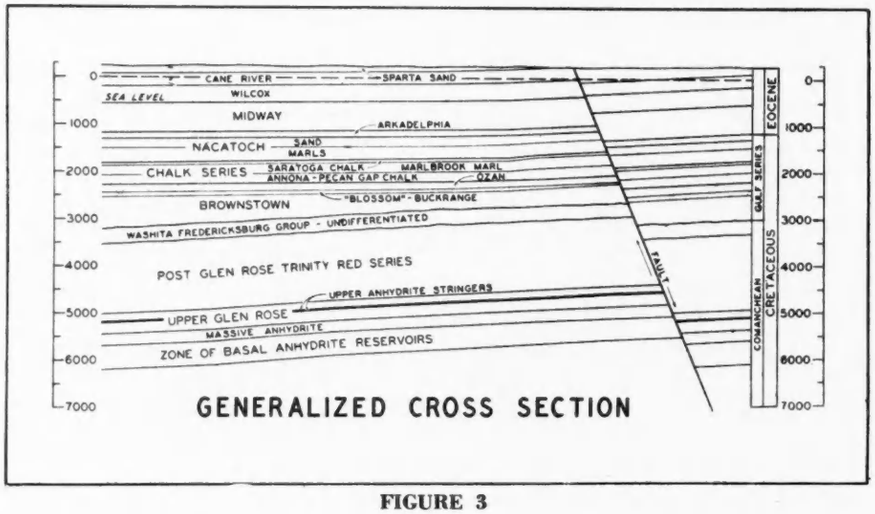


FIGURE 3

TOUGH!

The sergeant is tough. He has to be. He has a tough job. And because he handles his job well he can put chevrons on his sleeve. That's the Army's reward for long and worthy service.

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LAY-SET Preformed must earn its "chevrons" in the form of automatic re-orders. *It does.*

GREEN SIGNIFIES SAFETY

LAY-SET Preformed Rotary Lines are tough. They have to be. They have a tough job. They have to run at high speeds, yet spool perfectly. They do. They mustn't twist in the sheaves and wear themselves out prematurely. They don't. They must resist kinking. They do. They must lend themselves to quick stringing. They do. Each strand must carry its full share of the load. It does. They have to give long and worthy service. *They do.*

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ALL HAZARD WIRE ROPES MADE OF IMPROVED PLOW STEEL ARE IDENTIFIED BY THE GREEN STRAND

RODESSA FIELD RESERVOIR HORIZONS

		THICKNESS IN FEET
BASE OF MASSIVE ANHYDRITE		
	BLACK SHALE AND BROKEN OOLITIC LIME	58
FIRST LOWER ANHYDRITE STRINGER	ANHYDRITE LENSES BLACK SHALE FOSSILIFEROUS LIMESTONE	87
HILL SAND HORIZON	SAND	35
SECOND LOWER ANHYDRITE STRINGER	ANHYDRITE INTERBEDDED BLACK SHALE GREY OOLITIC LIMESTONE	80
CADDO LEVEE BOARD HORIZON	OOLITIC LIMESTONE 60 FT +- SHALE SAND SHALE OOLITIC LIMESTONE	88
MOTTLED RED AND GREEN LIMESTONE	IMPERVIOUS MOTTLED RED AND GREEN LIMESTONE WITH OCCASIONAL BEDS SHALE AND DENSE LIMESTONE	55
DEES HORIZON	OCCASIONAL COQUINA DEES SAND COQUINA LIMESTONE OOLITIC SAND OR "MEALY" LIMESTONE	95
TOP OF BASAL BLACK SHALE MEMBER OF GLEN ROSE FORMATION		

FIGURE 4

ries. This latter group of formations which is undifferentiated so far in the field, has a thickness of about 310 feet.

The Washita-Fredericksburg group is believed to lie unconformably upon the post Glen Rose-Trinity Red Series. This series is characteristically a section of red shales interbedded with sands and limestone, which are more indurated than many of the Upper Cretaceous shales and sands. This section has a thickness of approximately 1500 feet.

The contact between this red series and the underlying Glen Rose formation is not readily recognizable in drilling. The upper 435 feet of the Glen Rose between the red series and the top of the Massive Anhydrite member is composed of black shales and white fossiliferous limestones with two thin, persistent stringers of anhydrite, the first of which occurs about 165 feet below the top of the formation and the second about 70 feet below the first. The uppermost anhydrite stringer is the first distinct marker upon which the depth of the lower formations may be predicted. The Massive Anhydrite member is nearly pure anhydrite but does contain thin beds of black shale and fossiliferous limestone. Its thickness is about 250 feet.

Figure 4 illustrates the horizons underlying the Massive Anhydrite. About 58 feet of oolitic limestone and black shales occur below the base of this member and above the top of the first lower anhydrite stringer. This stringer has a thickness of approximately 87 feet and varies in composition from pure anhydrite to lenses of anhydrite interbedded with black shale and fossiliferous limestone.

The Hill Sand horizon, immediately underlying the first anhydrite stringer, is a zone of rather fine grained sand and sandy shales having an average thickness of about 35 feet. This sand is the uppermost producing horizon in the field. It is persistent as a zone over the entire field but its sand content varies from a few feet to a maximum of 35 feet. Below the Hill horizon occurs the second lower anhydrite stringer. It consists of about 80 feet of anhydrite, black shales and gray oolitic limestone. This zone is sufficiently impervious to separate the Hill Sand reservoir from the underlying Caddo Levee Board reservoir.

The Caddo Levee Board horizon has a total thickness of about 88 feet and consists of oolitic limestone interbedded with black shales and sand. The porosity of the oolitic limestone is variable. The sand occurs about 60 feet below the top of this horizon. Its development as a sand varies locally from 0 feet to about 20 feet in thickness.

Underlying the Caddo Levee Board horizon is an impervious zone of mottled red and green limestone interbedded with occasional black shales approximately 55 feet thick. Immediately below this zone occurs the Dees horizon, which is the principal reservoir of the field. The uppermost portion of the Dees horizon consists locally of a porous coquina limestone, which when it occurs, immediately overlies the Dees Sand. The lithology of the Dees Sand varies from that of a true quartz sand to that of a sandy limestone interbedded with sandy shale. Its average thickness is about 15 feet. Underlying the Dees Sand is another bed of porous coquina limestone about 20 feet thick, which occurs rather uniformly throughout the field. Below this coquina occurs the oolitic sand, sometimes described as a "mealy lime," being very friable and porous. Occasionally, beds of dense gray limestone and black shale occur between the coquina and the top of the oolitic sand. Locally, the oolitic sand often contains additional beds of coquina. The Dees horizon has a total average thickness of approximately 95 feet.

Wells in the field are drilled by heavy-duty rotary rigs, generally powered by 12-inch by 12-inch twin steam-engines. One gasoline rig is being operated. The draw-works generally have eight-inch line and drum shafts, though the sizes vary from six to nine inches. The types used are horizontal, horizontal unitized, jack shaft, and jack shaft unitized. The pumps vary in size from 14-inch to 20-inch, and the pressures carried range from 450 to 1100 pounds, dependent upon conditions. The pumps usually are set up so that they may be compounded for higher pressures. Boilers vary in size from 75 to 125 horsepower, with working pressures of from 225 to 350 pounds. In drilling, four-inch and six-inch drill pipe is customarily used, and three-inch drill pipe is used for drilling or coring inside the production string. In some cases tubing has been used to drill the final plug and to drill in with. When using four-inch to six-inch drill pipe in making hole, most contractors normally carry three to six points weight on the drill pipe, rotated at a speed of about 80 revolutions per minute. The weight carried may vary from three to 12 points and the speed of rotation from 50 to 240 revolutions per minute, depending on the condition of the bit, the nature of the formation and the straightness of the hole.

In starting the hole, drag and fishtail bits are used. Usually more than 75 percent of the hole is drilled with rock bits. There is a difference of opinion among contractors in regard to the efficiency of drag bits at various points in the hole. A notable difference in the rate of drilling of corresponding horizons has been observed in different parts of the field. A special bit is in use in the field and is utilized principally to straighten crooked holes, although several contractors have used this bit to some extent in ordinary drilling.

The number of bits required in drilling varies rather greatly from well to well. The minimum number used in one well, according to information available, was three drag bits and 14 rock bits, while a maximum of three drag bits, 29 rock bits, and 13 hard formation coreheads were used in another well. During the earlier development of the gas portion of the field it required an average of approximately 80 days to complete well. This average has subsequently been reduced to about 42 days with one well having recently been

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Casing Programs—Rodessa Field

	Size in Inches, O. D.	Weight in Pounds	Grade, All Seamless	Size of Hole in Inches	Depth in Feet
			I		
Surface String...	16	55.	C	21 & 22	250— 750
Second String...	10¾	40.	C	15½	2050—2250
Oil String.....	7	24.	D	9⅞ & 8¾	5800—6070
Tubing.....	2⅞	6.5	C	External Upset	
			II		
Surface String...	13⅜	54.5	C	17½, 18 & 19	250— 750
Second String...	9⅝	36.	C	12¼	2050—2250
Oil String.....	7	24.	D	9⅞ & 8¾	5800—6070
Tubing.....	2⅞	6.5	C	External Upset	
			III		
Surface String...	13⅜	54.5	C	17½, 18 & 19	250— 750
Second String...	9⅝	36.	C	12¼	2050—2250
Oil String.....	6⅝	24.	D	8¾	5800—6070
Tubing.....	2⅜	4.7	C	External Upset	
			IV		
Surface String...	13⅜	54.5	C	17½, 18 & 19	250— 750
Second String...	9⅝	36.	C	12¼	2050—2250
Oil String.....	7*	24.	D	9⅞ & 8¾	5800—6070
Tubing.....	2⅞	6.5	C	External Upset	
			V		
Surface String...	13⅜	54.5	C	17½, 18 & 19	250— 750
Second String...	8⅝	32.	D	11½	5300
Oil String.....	5¾	19.	D	8¼	5800—6070
Tubing.....	2⅜	4.7	C	External Upset	

All the above casing programs are being used at the present time with the exception of number V.
* Flush joint.

FIGURE 11

completed in 20 days to the production string casing seat at a total depth of 5993 feet. In this latter case two drag bits, 16 rock bits, and one hard formation corehead were used.

The formations penetrated at Rodessa make a very good natural drilling mud, having a weight of about 11 pounds when a "shale shaker" is used. Some of the contractors and operators in the field feel that it is advantageous to start their wells with prepared mud, keeping the viscosity low until the well gets down to the top of the first anhydrite, where they then increase the viscosity and weight in order to assure the removal of the anhydrite cuttings. The average mud used in the field varies in weight from about nine to 11 pounds and in viscosity from about six to 33 centipoises, dependent upon both the personal equation of the operator and the conditions involved. The indicated best weight is about 10 pounds with a viscosity of 22 to 28 centipoises. Immediately prior to running the production string, and in some instances the second string, some of the operators add colloidal clay to their mud in an effort to facilitate landing the pipe at the desired point.

Many different casing programs have been used, such as shown on Figure 11. Program No. 5, used during the earlier development of the field, is now abandoned. The first four are still in general use.

In cementing the various strings of casing the general practice is to use from 250 to 550 sacks of cement on the surface casing, allowing it to set from eight hours to three days; 300 to 1250 sacks on the second string, allowing it to set from 12 hours to three days; and 200 to 1250 sacks on the oil string, allowing it to set from 12 hours to five days. Quick setting cement is invariably used when the setting time is extremely short. In most cases, quick setting cement is run behind the regular cement in an effort to deliver the quick setting portion to the base of the casing.

Figure 12, No. 1, shows the plan and profile of a full hole survey of one of the wells. While there is not sufficient data of this sort to indicate the general trend of deviation in the holes, it is interesting to note from the plan that in this case the hole tends to drift down-dip to a depth of about 3000 feet and then to drift to the right, roughly parallel to the strike of the formations. At approximately the top of the Glen Rose limestone and shale series, the hole takes an abrupt turn to the right and drifts up-dip through the anhydrite into the reservoirs. In this case, the total horizontal displacement of the bottom of the hole with respect to its surface position amounts to about 200 feet. The profiles indicate that the hole tended to deviate from the vertical most noticeably in the Nacatoch at about 1500 feet; at the top of the Saratoga member of the chalk series at approximately 2000 feet; in the Blossom Sand at approximately 2600 feet; and at the top of the Red Beds at approximately 3350 feet. In the case of a few wells, deviation has occurred as shallow as 300 feet. The vertical depth correction based upon the survey shown amounts to about 20 feet. Crooked holes, such as illustrated, no doubt account for many of the structural variations shown on subsurface maps.

Figure 12, No. 2, shows a profile of the same well, based upon straight hole tests. The graph, of course, is plotted in a constant direction and, therefore, exaggerates the horizontal deviation of the well. It is a general practice for such straight hole tests to be made at intervals of 500 feet or less.

Figure 12, No. 3, is a generalized electrical log from the surface casing seat into the Dees horizon reservoir, together with two temperature surveys. The temperature curve on the left side of the graph was taken in an open hole four hours after circulation was stopped. The curve on the right side was taken in an open hole

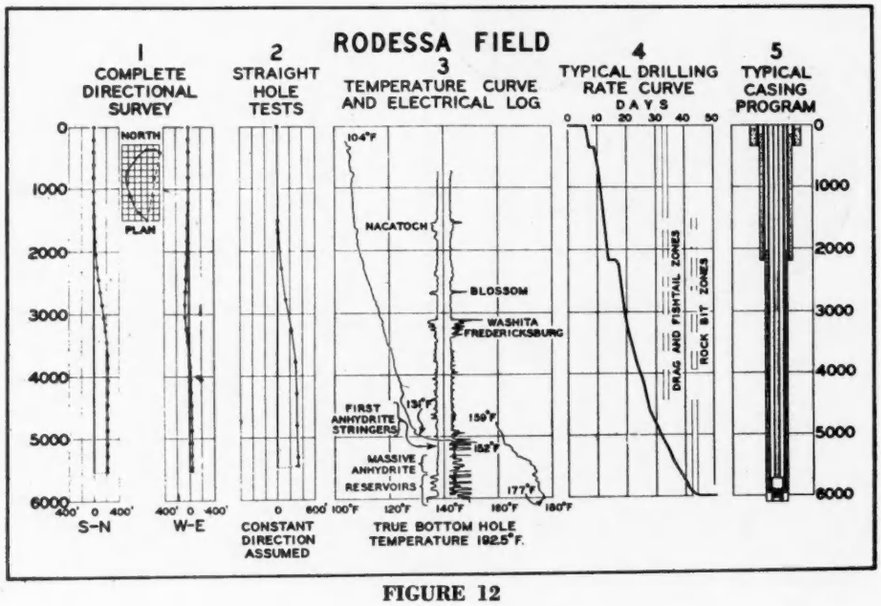

FIGURE 12

A SMOOTH, ROPEY MIX

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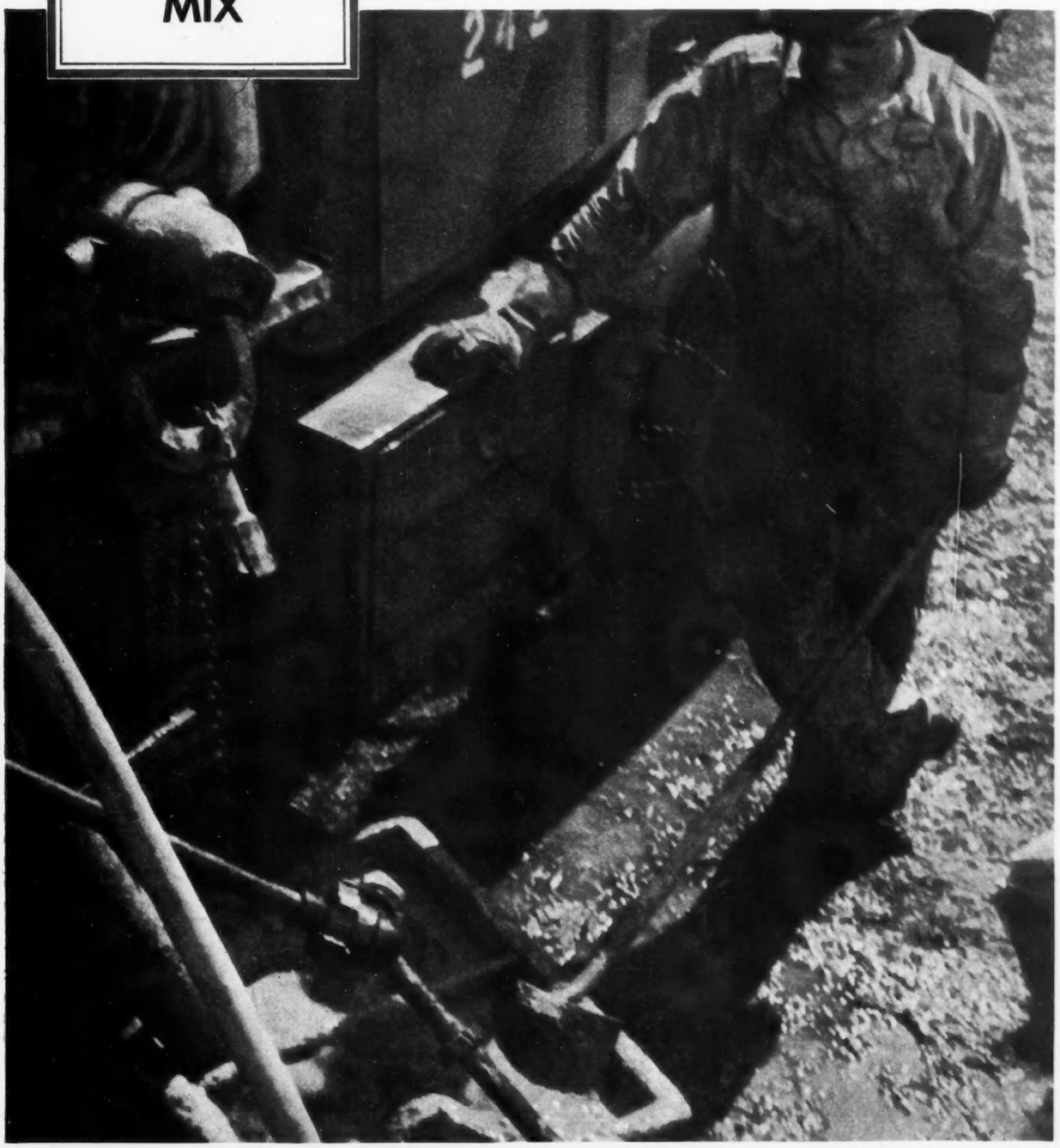

'INCOR' 24-Hour Cement

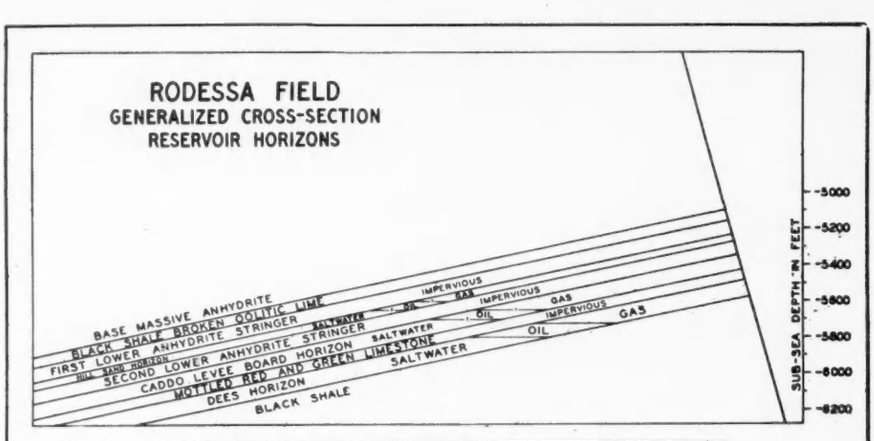

FIGURE 13

12 hours after circulation ceased. While these curves do not show the true temperature of the formations, they illustrate the temperature variations that do occur in the subsurface down into the reservoir. A most interesting variation occurs at the top of the first anhydrite stringer where the temperature increases at a very rapid rate, the increase being approximately 28 degrees in about 100 feet. Bottom-hole temperature observations indicate the true reservoir temperature to be about 192 degrees Fahrenheit.

Figure 12, No. 4, shows a typical drilling rate curve together with a graph showing the horizons in which it is customary to use the different types of drilling bits, as previously described.

Figure 12, No. 5, illustrates a typical casing, tubing, and liner program.

In completing a well the general procedure is to land and cement the producing string sufficiently below the gas-oil contact so as to shut off the cap gas and minimize the gas-oil ratio. Perforated liner is usually set in the open hole below the final oil string. Some of the operators have completed their wells very successfully without the use of liner when the amount of open hole was not too great. In a few cases, the production string has been set through the reservoir and subsequently perforated in the oil saturated portion. Tubing is usually run to a point a few feet off bottom, either left open-ended, with varying amounts of perforations, or open-ended with skirts attached to prevent plugging.

The principal drilling difficulties encountered in the Rodessa field are the sticking and twisting off of drill pipe, "wash-outs," and the sticking of casing. Apparently the most hazardous points for sticking the drill pipe occur in the Nacatoch formation, the Blossom Sand, the top of the Red Beds, the Lower Red Bed water sands, the anhydrite, the Hill Sand, and the oolitic sand. "Twist-offs" most commonly occur in the intermediate limestone zone of the Red Beds and in the anhydrite. Occasionally, the second string of casing has been stuck in the Nacatoch formation. The production string has been stuck in some cases in the Hill Sand and in many cases in the oolitic sand of the Dees horizon.

While there are almost as many different ideas as to the cause of drilling troubles in the Rodessa field as there are operators and contractors, the following causes are believed to be the chief ones:

1. "Wash-outs," causing "twist-offs."
2. Allowing the mud viscosity to become too low.
3. Failure to remove cuttings.
4. Crooked holes allowing walls to become grooved by the pipe, thereby causing the collars to catch under certain conditions while the drill pipe is being run either into or out of the hole.
5 Carrying too much rat hole while coring.

Very often difficulties are encountered in landing the production string and liner on bottom due apparently to the dehydration of the mud at the bottom of the hole. This is probably caused by the reservoir absorbing the water from the mud under the conditions of temperature and pressure prevailing.

Figure 13 shows a generalized cross section of the three reservoirs. The development to date has shown only the presence of gas in the uppermost zone or Hill horizon. If oil is present it will have to occur down the flanks of the structure north of the present limits of oil production in the Dees horizon. The second zone, or Caddo Levee Board horizon, has shown evidences of oil saturation at a sub-sea depth as high as about —5625 feet. The oil-saltwater contact is as yet unknown and may be the source of some of the early saltwater trouble, inasmuch as some of the wells set casing above this horizon. The third zone, or the Dees horizon, is the principal oil producing reservoir in the field. The gas-oil contact is believed to occur at a sub-sea depth of about —5725 feet. The oil-saltwater contact is not exactly known but does occur somewhere between the sub-sea depths of —5800 to —5820 feet. The oil has a pure paraffin base, with an average A.P.I. gravity of about 43 degrees. The shut-in bottom hole pressure taken on August 25, 1935, was determined to be 2670 pounds. A bottom hole sample taken on the same date indicated the presence of about 530 cubic feet of gas in solution per barrel of oil.

The principal production problem encountered to date is really a drilling problem and is that of getting the pipe landed and properly cemented at a point below the gas-oil contact so as to exclude the gas in the gas cap. Wells completed in this manner usually have a reasonably low gas-oil ratio, thereby effectively conserving the reservoir energy.

In completing the wells, it is a general practice to displace the drilling mud by pumping clear water into the tubing, displacing the mud from the casing until the drilling mud has been removed. At this point the wells usually begin to flow under their own pressure and are then diverted into burning pits through chokes of varying sizes, from about ¼-inch up to about ½-inch.

The author is indebted to H. C. Spoor, Jr., W. H. Spears, W. F. Calohan and E. D. Meredith of United Gas System for aid in the preparation of the illustrations and for valuable criticism of the manuscript.

Six figures presented by the author have been omitted. Figures 5, 6 and 7 showed continuous cores of the Dees horizon, from the base of the Dees sand through the coquina and oolitic sand into the underlying shale. Figure 8 showed the texture of the Dees sand. Figure 9 illustrated the texture of the Coquina limestone and showed its extreme porosity. Figure 10 showed the texture of the oolitic sand.—Editor.

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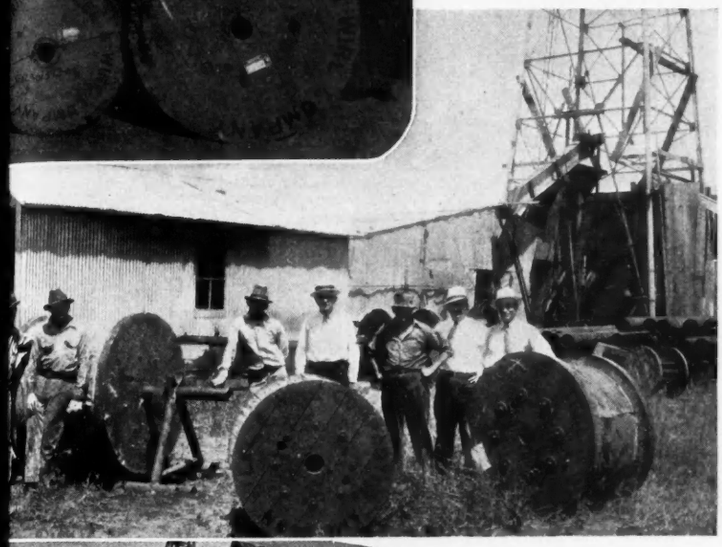

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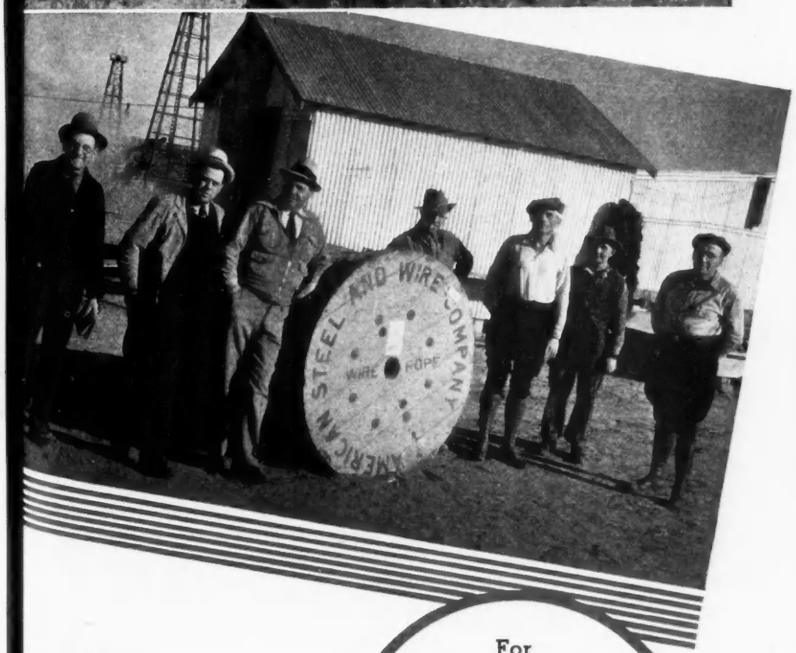

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Mechanical Analysis of

By GEORGE P. LIVERMORE,
Mandeville & Thompson, Inc.
Midland, Texas.

WITH the development of power rotary rigs in the past two years, there has come into the oil field a new line of thought. Pior to this time such terms as stand-by units, compounding, paralleling and over-all efficiency were unheard of in the driller's language. Such terms as these are not only being used in connection with power rigs, but with improvement in steam rigs. Several of the manufacturers of rotary steam equipment are making rapid strides along the lines of more efficient steam drilling.

Until recent years the trend has been toward increased capacity of drilling rigs with lesser thought being given to mechanical efficiency. With the advent of more conservative development programs in newly discovered pools, efficiency of the drilling rig has become prime consideration.

The purpose of this paper is not to give a quantitative analysis of the various types of rotary drilling rigs, but to make a mechanical comparison with respect to power size of the prime movers of the various types considered. It is generally accepted that the determining factor in choosing the size of the prime mover in either steam or power rigs is the slush pump load. After size of such prime mover is determined, it is a practice to duplicate this size for use in driving draw works and rotary. Thus, with this arrangement, the unit driving draw works acts as a stand-by unit for driving the slush pump. The combined capacity of the prime movers may be made available for hoisting. The greater the number of speed changes on the draw works, the greater the flexibility for hoisting. However, the top speed ratio would be determined by the single-line speed (with empty blocks) desired by the operator. The lowest speed ratio must be such as to permit handling of the heaviest load the rig will ever have to handle with a single prime mover.

Convenience of Control Important

With the improvement of drilling bits resulting with fewer round trips, hoisting speed becomes a minor consideration. Convenience of control is of more importance than power available. By this I mean, the ability to use the power as desired results in more satisfactory operation. Some of the factors contributing to the convenient and satisfactory hoisting operations are smooth operating reverse, free-rolling drums, anti-friction bearings in the crown block and traveling block, heavy hook, etc.

Since the power available for hoisting is ordinarily twice the amount required by the slush pump, we shall here make only a mechanical analysis of the various types of drives between prime mover and slush pump. In making this comparison, we will first decide the necessary capacity of the boilers to handle the steam slush pump.

We will assume for this comparison the following conditions:

Steam Pump Size 14×7¼×14.
Operating at 50 strokes per minute.
Pressure of fluid discharge from pump=500 pounds.
Pressure gauge 10 feet above sump.
Average pressure of steam on work stroke 225 pounds absolute.
Weight of mud fluid 10 pounds per gallon.
Volumetric efficiency of the fluid end=98 per cent.
Mechanical efficiency of the pump= 94 per cent.
This pump with 100 per cent volumetric efficiency would handle 484 gallons per minute.
484×.98=474 gallons per minute at 98 per cent volumetric efficiency.
500×2.31=1155 feet head.
474×10=4740 pounds mud handled per minute.
Work done by pump is

$$\frac{4740\times1155}{33{,}000}=166 \text{ H. H. P.}$$

Steam per I. H. P. hour of fluid end is 60 pounds.[1]
Horsepower input into steam end—166×.94 is 156 horsepower.
Heat of vaporization at 225 pounds absolute is 833.2 B. T. U.
1 B.H.P. is 33,470 B. T. U.

$$\frac{833.2\times60\times156}{33{,}470} \text{ is } 233 \text{ B. H. P.}$$

The thermal efficiency of the above pump is approximately 4 per cent.

[1]Oklahoma City tests of steam equipment conducted by W. H. Carson.

It can be seen from this analysis that 2-125 horsepower 250-pound boilers would be required to supply the steam used by the slush pump. The rest of the boilers that would be at the rig would have to drive rotary table and all auxiliary equipment.

With either mechanical or electrical rigs the power that must be delivered to the pinion shaft of the slush pump must be the same. On making the mechanical analysis of the power pump, I have taken a pump of the same size as steam pump in example above and operating under the same pressures and speed. The following efficiencies will be used in making this analysis:

Volumetric efficiency 90 per cent.
Hydraulic efficiency 85 per cent.
Mechanical efficiency of gear end 90 per cent.
Volume handled by fluid end—484×.90 is 436 gallons per minute.
Hydraulic horsepower of pump is

$$\frac{436\times10\times1155}{33{,}000}=153 \text{ H. H. P.}$$

Horsepower to pinion shaft is

$$\frac{153}{.85\times.90}=200 \text{ H. P.}$$

For the analysis of an electric rig, I have assumed that the internal combustion engine drives with V belts to a D. C. generator and that the drive from the D. C. motor to the pinion shaft of the slush pump

Sizes for Prime Movers

FOR ROTARY DRILLING RIGS

is also V belt drive. In making this analysis, I have used the following efficiencies:

V-belt drive 97 per cent efficient.
Motor 91 per cent efficient.
Generator 91 per cent efficient (includes exciter)
Line losses between generators and motor 1 per cent.

Using this analysis the brake horsepower that would have to be delivered by the prime mover would be

$$\frac{200}{.97\times.91\times.99\times.97\times.91} = 259 \text{ B. H. P.}$$

Then the efficiency between fluid end of pump and the brake horsepower delivered by the prime mover is

$$\frac{154}{259} = 59.5 \text{ per cent}$$

For the analysis of a mechanical drilling rig I have assumed V belt drive from prime mover to slush pump. Using the efficiency of V belt drives as 97 per cent the brake horsepower that would have to be delivered by the prime mover is:

$$\frac{200}{97} = 206 \text{ B. H.P.}$$

Then the efficiency between fluid end of pump and the brake horsepower delivered by the prime mover is

$$\frac{154}{206} = 75 \text{ per cent}$$

	TYPE OF ROTARY RIG		
	Steam, H. P.	D. C. Electric, H. P.	Mechanical, H. P.
Power output of fluid end of pump.....	167	154	154
Power input into pump.....	178	200	200
Power output of the prime mover.....	249	259	206
Power available for hoisting; after duplicating prime mover to operate rotary.	498	400	400

In the above comparison specific rigs were not analyzed, only types of rigs were considered. Mechanical analysis of a specific rig would result in mechanical efficiency of that individual rig. Efficiencies of several rigs of the same type would fluctuate over wide ranges, due to the arrangements of the various rigs considered. This statement is particularly true as regards power rigs. To date there is no standardization of power equipment, and there are practically as many drives and hookups as there are power rigs in use. Also in the above analysis, I have not taken into consideration the efficiencies of various types of internal combustion engines, only considering the brake horsepower that must be developed by the engine. The present practice of most manufacturers of oil field internal combustion engines is to overrate the power to be developed by the engine at continuous heavy load. There is no standard M.E.P. at which various types of engines are rated.

It can readily be seen from the above analysis that a mechanical rig is 15 per cent more efficient between pumps and prime mover than is the D. C. electric. This means that in the case of the mechanical rig internal combustion engines of 15 per cent smaller capacity would be required to do the same amount of work as a D. C. electric rig.

From the standpoint of flexibility the D. C. electric rig excells all types of power rigs. This is due to the inherent characteristic of D. C. electric to develop high torque at low speeds. However, from the standpoint of investment, the initial cost of electric rig is much higher than a mechanical rig of equal capacity, due to additional equipment, such as larger prime movers, generators, motors, and electrical switch board.

With a mechanical rig one does not have the fineness of control that exists on the electrical rig, nor does one have the high torque at low speed. However, in the mechanical rig, the engines are paralleled for hoisting, which not only adds to its speed but also to its capacity for hoisting. With the improvement of drives, greater capacity of friction clutches, and with lower initial investment, the trend of the drilling operators is going to be more along the lines of mechanical rigs than of D. C. electric.

THIS paper was presented at the Spring Meeting of the Southwestern District, American Petroleum Institute, Division of Production, held at Shreveport, Louisiana, on April 9 and 10, 1936.

The statements and opinions expressed are solely those of the author, and should not be constructed as an official action of the Institute, or as an opinion of the Institute or of this publication.

Vocational Training

IN THE PETROLEUM INDUSTRY

By WALTER H. MEIER,
Atlantic Oil Producing Company,
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AFTER defining briefly the scope of vocational training, the author gives the advantages to oil field workers, with a concise outline of the history of vocational training under the Smith-Hughes Act, together with the American Petroleum Institute's part in this work, with statistics on enrollment, etc.

This paper was presented before the Spring Meeting of the Southwestern District of the American Petroleum Institute Division of Production, which was held in Shreveport, Louisiana, on April 9 and 10, 1936.

ALMOST every normal person has a desire to progress, to better his station in life, to achieve success in business, to be more than just another worker. Of course, it is impossible for all us to become foremen, general superintendents or vice presidents because there must be some one left to do the work. But through systematic study we all can learn more about our particular occupation and those occupations allied or related to it. This broadening of one's vocational education not only better fits the individual to perform his job but if the opportunity to advance presents itself, he stands the better chance for promotion than the man who has not taken advantage of increasing his vocational knowledge.

Oil field workers today realize that injuries resulting from accidents are not only expensive to the employer but are expensive to the worker. They also realize that accidents which may cause injuries to workmen or damage to equipment are the result of mistakes usually due to the lack of understanding of some phase of the job. The vocational training courses are bringing about a better understanding and appreciation of the work to be done and, therefore, should be of material benefit in reducing the accident rate and in keeping the worker on the job.

Any man who has been employed in the petroleum industry for the past 10 years can attest to the fact that vast changes have taken place in all branches. New methods have been adopted and the technique of their application has greatly improved. Standards of workmanship have been raised and the individual worker finds it requires study and earnest application of his talents not only to keep pace with progress but to better himself. While there is a place in our industry for the strong back, brain is more important than brawn to meet modern conditions. You can not stand still very long in any occupation. The man who does not grow with his job will eventually be outdistanced by his fellow worker and gradually forced to give way to the man who has acquired knowledge and improved his ability through study and training.

The Federal Government in 1917 recognized a national demand for the practical education of adult workers and passed the so-called Smith-Hughes Act. This practical type of instruction is supported by Federal funds (50 percent), State funds (25 percent), and local funds (25 percent). The local funds may be obtained by making a nominal charge of a dollar and a half or two dollars to each student as an enrollment fee.

This adult vocational instruction is under the direct auspices of the Department of Industrial Education of the various states. The organization and supervision of classes are controlled by the local public school authorities cooperating with the state department.

In any locality where 10 or more workers desire instruction in a particular subject and there are facilities for instruction, classes may be formed. Such organization should be through application to the local school superintendent or, if necessary, direct to the state director of industrial education. Proper publicity, letters of notification, personal contacts, published notices, announcements and circulars, advertise the classes and aid in promoting interest and increasing initial enrollment.

These classes cover almost every vocation in life and their increasing popularity throughout the country is definite evidence that the movement is filling a long felt need.

In the production division of the petroleum industry various methods of employee education and training had been conducted by several companies with rather indifferent success. There were numerous reasons why such individual efforts were not entirely satisfactory; a few of the more important reasons being, lack of suitable text material, lack of properly qualified instructors, limited choice of subjects, indifference on part of employees and expense of maintaining classes. Three years ago this month the Directors of Industrial Education for Oklahoma and Texas approached the Division of Production of the American Petroleum Institute for the purpose of enlisting cooperation in the establishment of vocational classes for the men in the field and in preparing suitable text material for such classes. After some preliminary conferences, the Committee on District Activities for the Production Division announced a plan of cooperation for establishing vocational training classes in the Institute chapter areas by assisting the state vocational representatives in reaching those who might be interested and by giving their program active support. The vocational representatives appeared at meetings of various chapters and presented their training plans. Classes were organized, instructors selected, and in a short time some three thousand oil field workers were studying such subjects as Elementary Science, Oil Field Mathematics, and Gas Engines, et cetera.

As texts were not then available, subject outlines were prepared by the state and instructors obtained reference works and taught the classes as best they could.

We quickly found that we had undertaken a real

job but one that would fill a long felt need and accomplish the result better than any other agency.

The primary demand was for suitable text material to serve the ever increasing number of classes. To meet this situation, at the annual meeting of the Institute in 1933, the Central Committee on District Activities appointed a Topical Committee on Vocational Training to act as a correlating and validating committee on text material. The committee has held six meetings, three in Dallas, one in Oklahoma City, one in Houston and one in Bartlesville. The function of this committee is to:

a. Prepare an outline of production division subjects including pipe lines, gas, and natural gasoline manufacture.
b. Assign these subjects to the state vocational representatives for development and the writing of text. This eliminates duplication of effort on the part of the states and insures uniformity of texts.
c. Selection of practical operating men who are, by education and experience, especially qualified to assist the state vocational men in the preparation of the texts. This is to insure that the text will be as nearly up to date as possible and the inclusion of only good practice in applications.
d. Review and validate text material before it is published. Again men especially qualified in certain subjects are selected to critically review the texts.
e. Assist the federal and state representatives in a general advisory capacity.

Through whole-hearted unstinted cooperation between state supervisors, company and school representatives, rapid progress is being made towards the completion of a broad series of texts on vocational subjects for our industry. This ultimate list includes drilling of wells, production of oil and gas, pipe line transportation, natural gasoline manufacture, also such general subjects as mathematics, elementary science, oil field transportation, motor vehicle driving, etc. The courses now completed and available are shown in the attached circular No. 116.

All vocational classes are personally conducted by a competent teacher paid with federal, state and local funds. There are no correspondence courses and no tuition is charged, the students' only expense being the text books for each course (fifty cents and one dollar) and a nominal enrollment fee of a dollar and a half and two dollars per course as an assurance of good faith on his part. Some companies have adopted the practice of refunding the enrollment fee to those of their employes who satisfactorily complete a course of study.

Teachers selected to conduct vocational training must have certain qualifications. Primarily the teacher must show mastery of the subject to be taught. Evidence of leadership and the ability to impart knowledge is also necessary. He should have held positions of responsibility. It is not necessary that he be a graduate of a college or high school but he must have sufficient knowledge and experience to interpret the text material adequately, and in a logical, interesting manner. The applicant for a teacher's certificate must be recommended by the local public school's director. It is the instructor's task, first, to explain the basic principle involved; second, the manner of application and third, the correlation of this information to some operation familiar to all. The classes frequently assume the order of a conference or open discussion on such subjects as are pertinent or relative to the text. Each subject is cleared as it is brought up unless it necessitates further study.

Blackboard illustrations are used wherever possible. When obtainable a projector and slides may be used to good advantage or even an occasional moving picture.

In mathematics a slide rule made large enough that the divisions are visible all over the class room is very helpful for teaching its use and application. Likewise having available an internal combustion engine or various types of pumps will materially assist both the instructor and students in presenting these courses. The skillful handling of the subjects in order to emphasize important points, without allowing the student to lose interest in apparent inconsequential detail, is a responsible task. Ordinary academic teaching or lecturing is not advisable for it definitely reduces the teaching effect and the student does not readily absorb the instruction.

The employer should understand that when an employe has satisfactorily completed any course validated by the Institute's Topical Committee on Vocational Training that employe has not only made a real effort to improve his knowledge of his vocation but probably, through this effort, has broadened his knowledge of related subjects thus making him a better worker. The certificate of completion which is presented by the state vocational authorities to each student satisfactorily completing a course has already been recognized by some employers as having a real value by noting the fact on the employe's service and personnel records. This interest and cooperation of the employer not only encourages the employe to study and learn to become more proficient in his vocation but has a mutual benefit.

You may be interested in knowing that in Texas, according to a report issued by the Texas State Board for Vocational Education, dated September, 1935, there are 4480 students enrolled in our petroleum series vocational courses; this compares with 4088 in May, 1935. There were 248 classes conducted in 57 different localities by 220 teachers. There are 153 oil companies represented in the above enrollment. As of September, 1935, 2301 certificates of credit for completion of unit courses had been issued.

In Oklahoma, according to the report issued by the State Board for Vocational Education in September, 1935, there were 972 students enrolled as compared with 924 reported in May. There were 71 classes conducted in 18 localities by 57 teachers. Thirty-three different oil companies were represented in the above enrollment.

In Kansas there is considerable interest and several classes have been recently organized. In California there are some four hundred students enrolled in Petroleum Industry classes, not including foremen conferences. While vocational training in the Petroleum Industry in California has not reached the proportion it has in the Mid-Continent, the work has been quietly extended by the state supervisor as fast as a sincere demand has been apparent. Undoubtedly, as the men in the field become informed that such training is available, demands for the formation of classes will arise in other oil producing states. Executives of producing companies can assist in this work by giving it their approbation and encouraging their employes to participate.

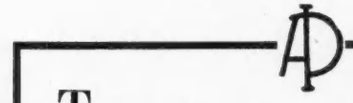
Many of the text books prepared for field employment are used by other departments of our industry, and even from foreign countries have come requests for copies.

That we are headed in the right direction—that our courses of study are fundamentally sound and needed—is fully evidenced by the desire of thousands of men in the petroleum industry to improve their knowledge of, and ability in, their vocation.

Protective Equipment

USED IN ACCIDENT PREVENTION

By J. L. RISINGER, Department of Accident and Fire Prevention, Magnolia Petroleum Company and Magnolia Pipe Line Company, Dallas, Texas.



THE SCOPE of this subject depends upon the construction placed upon the terms "protective" and "equipment," the implied who or what, and the definition of an accident.

There is a wide difference between an accident and an injury. An accident might be termed as an error in design, construction, operations, procedure or personal performance of duty, many of which occur without injury to persons and sometimes without damage to property, but never without cost to a company.

The modern conception of accident prevention is the elimination of these errors, and therefore their direct and indirect cost to a company, emphasizing in the interest of company and employee the injury phase. From this standpoint we might outline protective equipment as follows:

1. **The equipment of the individual with information as to correct operations and procedure in order that he might not only avoid the hazards which, in spite of guards, design and operations, constantly arise, but produce the greatest amount from his efforts at the least cost. An attempt to completely replace this phase of protection by material protection is following the path of least resistance. Guards will prevent machinery from pulling the cautious, thoughtful and informed workman into them and destroying him, but they will not fence out ignorance, indifference or insubordination.**
2. **Guards serve two purposes: to protect workmen against hazards and as a constant reminder to proceed correctly and therefore safely. No poster has ever been designed that will have the psychological effect upon the job pride, efficiency, thoroughness and importance of correct procedure of the workman like a well regulated, clean, orderly and guarded place to work. If guards are used they should be standard, approved and dependable. Workmen will depend upon guards. Ineffective guards, therefore, create hazards rather than protect against them.**
3. **Standardized, correct and efficient design and operating procedure will not only reduce the frequency of injuries but will control the severity of injuries, increase production and reduce overhead cost.**
4. **Personal protective equipment serves two purposes: protection of the workman against injuries caused by error in procedure and protection against injury from hazards which, to date, design and methods in operating procedure have not been found to eliminate, or, if found, involve prohibitive cost.**

This paper was presented at the Spring Meeting of the Southwestern District, American Petroleum Institute Division of Production, Shreveport, Louisiana, April 9-10, 1936.

THIS DISCOURSE will be limited to equipment used by workmen for personal protection, carrying through the two purposes mentioned, and referring to other means of protection only when they influence or alter the use of such equipment.

It should be borne in mind that design and operating procedure in a majority of cases governs the necessity for the use of personal protective equipment, therefore it is difficult to specify definitely where this equipment in all cases should be used, since all companies do not proceed alike toward the same accomplishment. The most efficient use of protective equipment is design and operating procedure which eliminate the necessity for its use. The use of the greatest amount of personal protective equipment does not necessarily mean the greatest protection. For instance, an object might fall and strike a workman on the head. The path of least resistance would be to put hard hats on all workmen, rather than correct the error in procedure and up-keep which caused the object to fall. The hard hat was developed for specific operations where falling objects are likely, through error, to be prevalent and not for a cure-all. Following the cure-all theory, if the object had struck the employee on the shoulder, then what? The workman can hardly be expected to wear a suit of armor like the knights of old when corrections in procedure will eliminate the necessity.

This illustration is used with no intent to belittle the importance of the use of protective equipment, but to emphasize the exercise of judgment and knowledge in the selection and use of each item for the specific purpose for which it is designed.

To read the volumes of accident prevention precautions, regulations, rules, and the standards in design and operating procedure published by the American Petroleum Institute and other organizations and prepared in individual oil companies, one could easily conclude that the safety men spend a considerable amount of time projecting imagination into possibilities sometimes very remote. This is not true, however, and it is to be constantly remembered that each and every precaution, rule, regulation and standard has been paid for in the particular company or in the industry by the loss of limb, or other physical injury or by loss of the life itself of some workman. That over and beyond this sacrifice by the employee, the company has lost in money, morale of personnel and public good will.

Just as precautions, regulations, rules and standards have developed to protect against a recurrence so has each item of personal protective equipment been developed to protect against continuous errors, and conditions which have caused suffering of human beings and economic waste to industry.

As the failure of ineffective guards depended upon by workmen create rather than eliminate the hazard to a greater extent does the careless use and upkeep of personal protective equipment multiply rather than reduce the problem in injury prevention. This equipment should be purchased, maintained and used as a part of operating equipment for the specific purpose designed and in the light of approvals by the United States Bureau of Mines, other such agencies

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and general practice by companies doing the same jobs in similar manner.

If it is determined by a company that a certain operation requires a specific personal protective equipment and it is so specified, then the specifications should be followed explicitly. It is better to abandon specifications than to permit them to be constantly ignored.

If a change in method eliminates the necessity of its use, then specifications should be changed immediately.

Time will not permit a discussion of each item of personal protective equipment used in the petroleum industry. Therefore, our discussion is limited to a few of the principal items used for:

1. Protection against dust, fumes, mist and gases.
2. Protection from falls.
3. Protection against heat.
4. Protection against falling and dropping objects, flying particles and harmful rays.

Any statement made in this discussion of an item of equipment used for protection in the cases above mentioned is not to be construed as or used for advertising purposes nor considered as an indorsement of its infallability. The type for use in any company for the specific hazard arising in such company's methods of procedure calls for specific thought, selection and application. Equipment is used here to illustrate general usage and differentiate between types used for different general purposes.

Protection Against Dust, Fumes, Mist and Gases

The chief reason for the low frequency of injury in the petroleum industry during the past two years from dust, fume, mist, asphyxiating, irritating and toxic gases may be credited to the progressiveness of the industry.

Knowledge of the problem and the application of the solution has reduced the serious consequences of a few years past to a minimum number of cases occurring usually as a result of accidents or errors in operations. Planned operations, mechanical safeguards, personal protective equipment and instruction of employees in first aid, particularly artificial respiration, have charted the course to results.

Filter-type dust, fume and mist respirators have been developed, tested and approved. Chemical cartridge types protect the workmen while using paint and other spray and in light fumes and smoke. The respirator for use in dust is not to be confused with the chemical-cartridge type used for spraying and light fumes and smoke.

Air line respirators have been developed that enable the use of a fresh air flow from air line while paint spraying, etc.

Types can be secured that are adaptable readily to the needs in the industry. In a few instances, respirators protect against error, but in the majority of cases, operating methods to eliminate the necessity of their use has not been found, or, if found, are extremely costly. However, the problem of protecting workmen from the effect of various kinds of dust has often been better solved by the installation of exhaust systems.

The principal equipment used as protection against exphyxiation, toxic and irritating gases, assuming that the problem of presence and kind has been determined, is the gas mask. Much has been done in design and operating procedure to eliminate the necessity for the use of the mask. There still exists, however, special operations where the use of the mask is imperative as protection in regular routine. In many cases the cost of completely dissipating the gas would consume more than the profits from the operation, therefore from the standpoint of economy, the gas mask is used, and then there is the double check against error in procedure and dissipation of the gases.

In general terms and for purposes herein contained, asphyxiating gases are those, the principal physiological effect of which is the producing of an oxygen deficiency. Toxic gases are those, the principal effects of which are poisoning or suffocation, and irritating gases are those which irritate the sensitive parts of the human body with which they come in contact, such as the eyes and breathing tracts.

Based on general purposes for which used, gas masks are of three types; canister, simple hose and blower-type hose masks.

In cases which contain hazardous fumes and an ample supply of oxygen, the canister mask with an appropriate canister will give protection.

The greatest efficiency in the absorption of gases is obtained when a specific gas or class of gases is met. In such cases the entire capacity of the canister is taken up with one chemical absorbent. Careful reference should be made to the available types of canisters.

This type of mask is recommended for use in toxic and irritating gases in open spaces only where the concentrations are not sufficient to create an oxygen deficiency. The correct canister for the gas being entered should be used. A canister that is not marked for the type of gases against which it offers protection should not be used. Although a greater length of service can be obtained from a canister filled only with the chemical used for protection against the specific gas, if there is any question regarding the proper canister to use, the canister for organic vapors and acid gases protects against petroleum vapors. Precautions are issued by the manufacturers of this type of mask against its use in buildings, tanks, bell holes, or other closed places where there might be an axygen deficiency, or around a fire or other places where there is heavy smoke. If there is any question, use hose mask.

Procedure in up-keep, sterilizing, testing and training employees in the use of this equipment can be obtained from the manufacturer.

Hose-type masks are used in the presence of toxic fumes or in cases of oxygen deficiency under conditions in which fresh air is available within a short distance and this fresh air can be brought to the man through a blower and hose. In case of oxygen deficiency or high concentration of gas, the hose mask is the only type of mask which can be recommended. For protection in cases in which the wearer of the mask does not travel more than 25 feet from fresh air, such as work in tank cars, manholes, or similar places, the simple hose mask may be used. This consists of the standard facepiece together with an appropriate carrying harness and a 25-foot length of 1-inch hose and a funnel and spike to be anchored in fresh air. The individual wearing the mask can breathe through this 25-foot length of air hose without difficulty.

Where the worker must go more than 25 feet from a source of fresh air supply it is necessary to force air to him by means of an air blower. These outfits should be approved or meet standard usage specifica-

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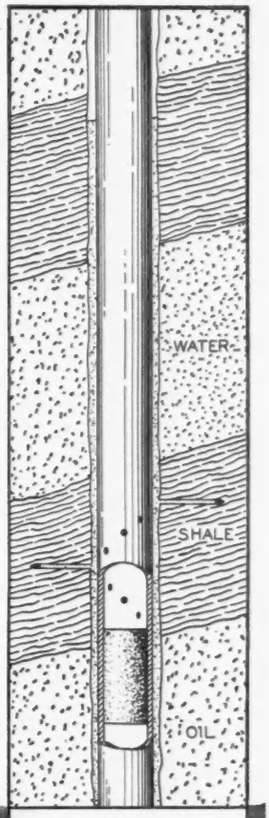

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tions. The length of hose should in no case exceed that recommended by the manufacturer and approved for capacity of blower.

The hose mask is recommended for use where there is poisonous gas present in heavy concentrations and in all closed places, such as storage tanks, tank cars, deep bell holes, well pits, buildings and any other locations where there may be deficiency of oxygen and bad fires where there is heavy smoke.

In making recommendations as to the type of gas mask, where there is any doubt, a blower-type mask should be recommended. The hose mask is the most complete type of protection.

The hose mask is used as an economic measure in making small repairs inside of enclosures, such as raising swing lines in tanks, where to attempt gas freeing would consume much time and expense. In such cases, extreme precaution is to be taken against sparks or any source of ignition that might cause an explosion.

Compressed air or positive pressure blowers can be used where facilities are available and the demand justifies. They are mentioned here as an extended use of the hose mask. Oxygen breathing apparatus is mentioned without discussion due to the fact that the need for its use in the petroleum industry is confined to specific instances and not general purposes.

Another operation which may prove hazardous and which protective equipment alone seems to be the solution, is that of sand-blasting, which is largely employed to clean storage tanks, drums, etc., for the purpose of removing rust and preventing corrosion. Sand-blast protection means more than merely protecting the outer body from dust and flying sand particles. The lungs must also be protected. Sand-blast helmets have been developed, especially designed for protection against the inhalation of the dust by the operator.

Protection From Falls

Various methods are used to prevent men working in elevated places from falling. Under safety belts, we might mention electricians, linemen, telephone linemen, riggers, painters, cleaning or repairing tank rents, structural work, working in any place where there is apparent danger of slipping and working in derricks. Applicable for illustration here is the derrick safety belt worn whenever work is being done on any of the working platforms inside the derrick, above the derrick floor. These are manufactured of leather and of webbing. To enable a derrickman to quickly release himself where there is danger of a blowout or fire, belts with quick release buckles are manufactured.

The life line or anchor line of these belts should be of sufficient length to allow freedom of action by the wearer yet not of sufficient length to cause too hard a jolt or tax too heavily the strength of the belt in case of a fall. Derrickman should be cautioned against loose belts. They should be adjusted to a snug and comfortable fit.

Manufacturers warn against the use of a belt after it has been subjected to a drop test. Possibly the best method is to test one belt and then discard it, using this test as an indication of the strength of others, in similar condition, and with similar length of service. It is generally considered that the equipment should be strong enough to withstand the strain caused by a weight of 200 pounds falling a distance of 5 feet.

Protection Against Heat

Questions have arisen as to the use of woolen clothing and treated clothing to be worn by workmen in locations where a back-fire or other quick flash might subject them to heat. Time will here be devoted to a few outstanding items, only.

As introductory, however, cautions against the wearing unnecessarily of oily clothing at any time and place would prevent many serious burns, so would the use of rubber gloves, acid goggles and other protective clothing when handling acids, caustics, etc., and breaking into pumps or lines handling products of this nature.

By asbestos suits we include footwear, gloves and all the items necessary to completely protect the entire person. These complete suits are used in fighting fires, inspecting furnaces and other procedure where extreme measures against heat are necessary. The occasion being one of emergency, these suits should be used under close supervision.

The gloves are often used when handling hot objects and where hot objects may be encountered. The shoes are used where the feet are likely to be subjected to excessive heat.

The necessity of an exit from elevated places in case of emergency caused the development of safety slides. Although used in many places to prevent workmen from being trapped, application here is made to its use on derricks only.

Derrickmen have been trapped in the derrick and burned to death by fires blocking their exit by way of the ladder. A special emergency exit line and slide should be provided on derricks where gas may be present. The emergency exit line should be fastened to the girt above the working platform and securely anchored at a distance forming an angle of about 30 degrees with the earth's surface. Although the derrick slide should be in place on the line whenever the derrickmen are working on the derrick, it is hardly necessary to purchase a slide for each derrick, as slides are light enough for the derrickman to carry one into each derrick with him and place it on the line. These slides are provided with brakes to control speed of travel to safety.

Although not specifically personal protective equipment in the true sense of the word but rather a preventive against ill effects of heat from working in hot places, due to the interest taken by industry in the prevention of heat exhaustion or heat sickness, attention is directed to the use of salt or sodium chloride.

Painful and disabling cramps of the muscles of the arms and legs, back and abdomen have been observed during the hot weather period among employees working in what are known as "hot work conditions."

The excess of salt showing on workmen's clothing has been observed in all types of hot work. Professors J. S. Haldane and K. Neville Moss of Oxford and Birmingham Universities, while engaged in a study of the frequency and severity of cramps among miners developed the theory that the cramps were due to the loss of salt from the body through perspiration; that a certain normal amount of inorganic salt must be retained in the tissue in order to make muscular activity possible and if the amount of inorganic salt is reduced below a certain level, muscular cramps result.

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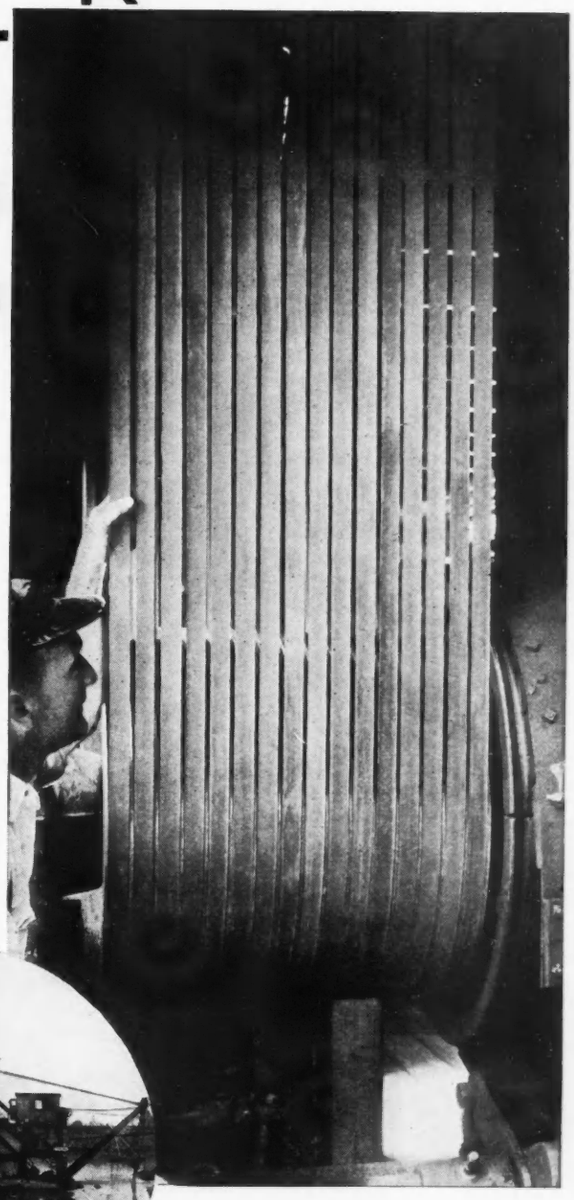

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large quantities of salt water was developed and later providing men with salt water as a preventive measure was instituted, from which, for convenience and to eliminate the necessity of men having to drink salt water, the tablets in bulk or in dispensing machines were taken into industry and have shown satisfactory results in the prevention of heat exhaustion or heat sickness.

Protection Against Falling and Dropping Objects, Flying Particles and Harmful Rays

Falling objects do the most serious damage when they strike workmen on the head. Injuries from dropping objects are most prevalent to the feet. Flying particles and harmful rays do the greatest amount of damage to the eyes. Therefore equipment is classified as head protection, foot protection and eye protection. Protection in the first two of these classifications is against error and in the third against error in a majority of cases but in others against the natural hazard of routine procedure.

The hard hat capable of deflecting or resisting rather heavy falling objects is finding favor in operations where error in up-keep or operating procedure is prevalent and the human element constantly enters the picture by extensive handling of materials and tools in elevated places. This type of head protection is widely used in a variety of occupations where men work at different levels.

The type and extent of protection needed, the equipment most suited to the solution of the problem and its comfort are points for consideration in the institution of the use of a hard hat.

Injuries to the feet are common in most occupations and in some are many and varied, but can be reduced materially by proper protection. This protection may be in the form of spat, shield, boot, shoe, overshoe of special sole, depending upon the hazards encountered. In some instances, injuries to the feet can be prevented by the use of regular shoes if they are in wearing condition.

Even where special protective equipment is not considered as needed, special attention should be paid to the fact that shoes worn by workmen are in condition to protect the feet during ordinary work.

Spats are often used where hot metal, sparks, sharp objects, etc., prevail.

In some operations where hot objects and material are being handled, metal shields of various types afford protection to the feet.

In electrical and wet operations, handling acids, etc., rubber boots of various grades are required.

Shoes with sewn soles, wooden pegs, etc., are provided for linemen and other electrical workers. Shoes with non-sparking nails or tacks are provided for use in locations dangerous from sparks. Wooden sole shoes are used for work on hot steel, bricks, etc. Shoes with protective toe box have prevented many foot injuries and cost but little more than other strong shoes. These shoes are coming into extensive use in oil fields and refineries, to prevent injuries caused by dropping tools, pipe and other materials and objects. These shoes can be obtained in the regular work shoe or in dress shoe type.

Even a slight injury to the eye may impair or destroy the eyesight, therefore, every possible attention should be given to the protection of the eyes.

The discourse here will be limited to goggles and helmets.

Eye injuries may be caused in so many different ways that it is very difficult to say just when goggles should be worn and when they need not be worn. There is no one type of goggle that can be used universally for all kinds of work, and due to the fact that eye protectors are to meet numerous types of hazards, many types of goggles have been developed, a study of which is necessary in selecting the particular type needed for the specific purpose. In general, they should be used in any location where flying particles might strike or enter the eye and the use of the goggles does not create a greater hazard than the one from which it offers protection, where harmful gases, acides, fumes, etc., might be splashed into or otherwise enter and injure the eye, and for protection against harmful rays such as produced during welding.

Goggles provide the greatest protection when snugly and comfortably fitted. For comfortable fit, the head band is placed above the ears and below the bony prominence of the back of the head.

Since flying objects might injure other parts of the body, effort should be devoted toward the prevention of flying objects and particles. Slip-ups being so prevalent in many operations, however, goggles are widely needed as protection of the eye against these errors and hazards from routine operation in others. (See Figure 1.)

Even though the lens in these goggles, except No. 10, are hard enough to withstand a blow sufficient to drive a small nail, they were broken by flying objects, while in service on workmen.

Of the 12 pairs shown in the photograph, No. 1 was broken when a caulker approached where a riveter was cutting off a rivet head. The fact that he did not raise his goggles, as is the usual custom, saved his eye, and possibly his life. When air machine was placed on the rivet, the rivet head being almost broken off, was driven like a bullet, striking the caulker straight in the eye, almost knocking him off his feet. Correct procedure of using a broom or a cage to catch the rivet head would have prevented it from being driven to the eye of the caulker, however, the goggles protected the eye and the man from the error.

No. 2 is also a case where goggles protected a man's eye and possibly saved his life. After changing gauge glass, steam was turned in to test; the glass, being cold, broke, propelling a particle of the glass to the eye of the workman, knocking a piece of the hardened lens loose, which fell inside, but did not go into the eye. Had the goggles not been worn, this piece of gauge glass traveling like a spear might have gone a considerable distance through the soft tissues of the eye into the head. The fact that the guard should have been replaced before steam was turned in even to test does not minimize the importance of the use of the goggles nor the service they rendered.

Case No. 10 might be cited as an error, yet so little was known of the cause that it can hardly be so charged. A workman was using a burning torch to cut pipe, allowing extreme heat of the torch to burn into the concrete pavement on which the pipe was lying; the concrete exploded, throwing particles to the eyes of the workman. These goggles being equipped with lenses for protection against harmful rays and not against hard blows, caved in, allowing small particles of glass to enter the eyes. This was removed, however, without serious damage.

Having had two occasions when welding goggles

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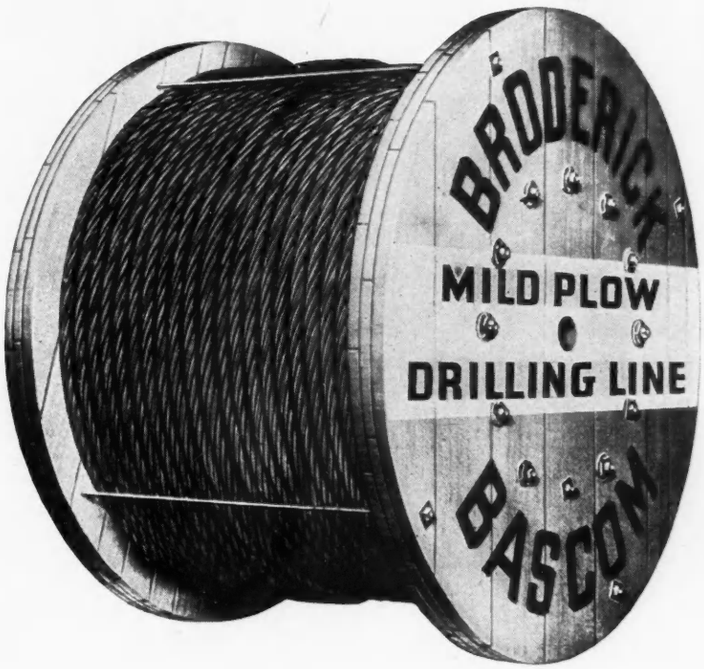

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EYES BY THE DOZEN

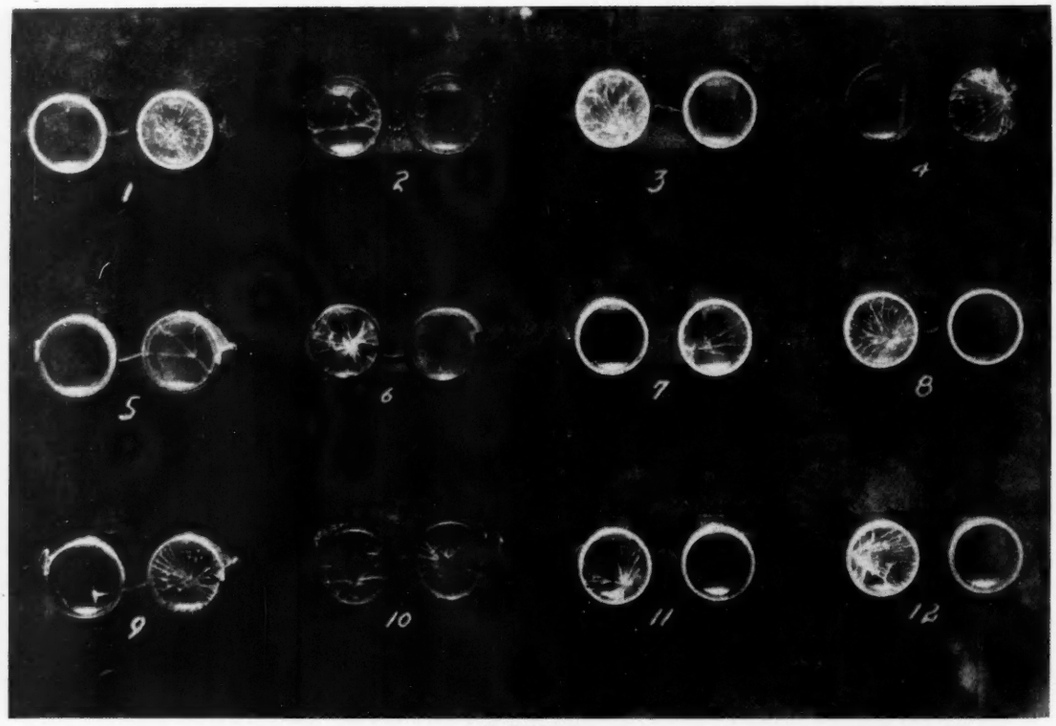

FIGURE 1

have been broken by flying particles, the problem of protection against the blow as well as harmful rays is being sought. Test is being made by substituting where necessary the hardened lenses in lieu of the soft clear lenses in welding goggles.

A study of the cause of the explosion of the concrete indicates that concrete has chemically constituted in it elements of water and in addition thereto concrete being porous, minute cavities are present. When the concrete is hardened moisture is held within these minute cavities.

When concrete is heated gradually even though being heated to a temperature equal to that produced by a welding torch, it will not explode, but, releasing the water constituency and moisture gradually will be broken up or crumble. When intense heat is applied rapidly, such as that developed by a welding torch, this chemical constituency of water and the moisture held in the pores will develop steam rapidly and explode the concrete.

Eye protection during welding operations could be expanded into health hazards, accident hazards, storage and handling of cylinders, generators, and other necessary precautions. A.P.I. manual on "Gas and Electric Cutting and Welding" covers this subject thoroughly and is recommended for study by those having any connection with these operations.

Welding processes may be placed in two groups as far as the effects of radiant energy are concerned.

First—Processes such as gas welding and cutting and electric resistance welding which produces visible radiant energy of only moderate intensities.

Second—Processes such as electric-arc welding and cutting which produce extreme intensities of radiant energy.

The National Safety Code for the protection of the heads and eyes of industrial workers specifies that for the first group, goggles, face masks, helmets and shields should be used.

For the second group, only the helmet or the hand shields should be used, as goggles do not give sufficient protection.

The purchaser should always make clear to the dealer the type of welding for which the equipment is to be used, so that the operator will be assured full protection.

Each of the types of equipment discussed might be projected into the different phases of the industry's operations requiring numerous and different specifications peculiar to each type of work, and other equipment could be brought into the picture from protection against rattlesnake and black widow spider bites to the bite of the spotted fever tick and sting of the centipede, and from finger stalls, protection against electric shock, use of non-spark tools to mine disasters, and oil tanker or tank explosions. We conclude, however, with credit to the ingenuity of engineers who have sought the solution and in a vast majority of cases solved the problem of protecting persons in each operation in the industry where protection has been needed, and to operating heads and engineers for perfecting design, planning procedure, advancing operating efficiency and training workmen to the end that this industry with tremendous potential hazards has made one of the safest industries in which a workman can seek employment.

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OIL EQUIPMENT *and* ENGINEERING EXPOSITION

Back-Pressure Method

GAS WELLS MAY BE GAUGED WITHOUT DISADVANTAGES OF OPEN FLOW TESTS

By DENIS S. SNEIGR

IN a booklet recently released by the American Gas Association, much valuable data on the gauging of natural gas wells is reported, following several years of cooperative research and study by the United States Bureau of Mines and the Natural Gas Department of the American Gas Association.

The investigation was carried on with the object in view of determining a practical method of gauging gas wells by methods other than the opening of wells to the atmosphere.

In the past, the delivery capacity of a gas well usually has been measured by either the open-flow method, whereby the well was permitted to flow wide open, or by taking the shut-in pressure at the well head.

In the open flow test, the well is permitted to "blow" wide open for 30 minutes to an hour or more, depending on the conditions, previous to the final test. A pitot tube is used to measure the delivery. The long period of releasing the gas into the atmosphere is necessary in order to obtain equilibrium conditions, but naturally, a large volume of gas is lost.

Besides the loss of gas, the conditions under which an open flow test must be made create operating hazards, because sand is often blown from the well, and furthermore blowing a well wide open may cause certain formations to cave or bring in bottom or edge water, which will drown out the well.

According to the report: "Pressure and flow data obtained on gas wells only under shut-in and open-flow conditions do not indicate the delivery capacities of the wells under normal operating conditions, are not a reliable basis for controlling production, and are not adequate for studying such gas production problems as are created by the presence of liquids in the sand, sand cavings, shooting, clogging of sand face and unsuccessful completion jobs."

After studying 582 gas wells in important gas-producing areas of the United States, and carefully gathering data on these wells and their characteristics, a method—known as the back-pressure method—was devised to gauge gas wells without the necessity of opening the wells to the atmosphere.

On most of the wells tested by the back-pressure method, the gas used during the test can be delivered into a pipe line; however, in some cases it is impracticable to thus use the gas and it must be vented to the atmosphere.

Even so, the gas is delivered at a high back-pressure and very little gas is lost as compared to the volume lost when the well is tested by the open-flow method.

The low rate of delivery that results from high back-pressures also descreases the possibility of damaging the well equipment and of formation caving and water trouble.

The report outlines the method of conducting back-pressure tests on gas wells:

"In gauging delivery capacities of normal gas wells by the back-pressure method, the well to be tested is first shut-in at the well head, and after the pressure in the well and reservoir sand become stabilized, the well head pressure is recorded. The well is then allowed to produce gas at a high back-pressure and after flow conditions again become stabilized, observations are made of the pressure at the well head and the rate of delivery of gas from the well. The back-pressure then is reduced and another set of observations are made of the pressure at the well head and the rate of delivery of gas from the well. Four sets of observations for back-pressures ranging from approximately 95 percent to approximately 80 percent of the shut-in pressure usually furnish sufficient data to establish the relationship between the rate of flow and the shut-in formation pressure squared minus the back-pressure at the face of the sand squared, and determine rates of delivery of gas at lower back-pressures, including the 'absolute' open flow of the well (rate of flow of gas that would be obtained if the absolute back-pressure at the face of the sand was atmospheric.)"

The report further outlines, through the use of various formulas and seven tables, the method to be used in computing the results of back-pressure tests. Limited space does not permit the reproduction here of the mathematical formulas and the tables; however, a brief outline of the various applications of back-pressure data to production practices undoubtedly will prove of interest.

According to the report, the main field of usefulness of the back-pressure method of gauging gas wells is the application of such data to the solution of natural gas reservoir conditions. That is, the storage of natural gas in depleted reservoirs.

Furthermore, back-pressure data may be applied to the solution of such production problems as the effect on delivery capacities of liquid in the well and in the producing formation, the effect of treating gas wells with acid, and the possible effect of shooting, to mention only a few of the problems listed in the report.

In planning gas-storage projects where the gas is returned to a depleted reservoir, back-pressure data can be used most advantageously. To quote the report: "The relationship of the pressure and flow that obtains if gas is delivered into the formation is very similar to the relationship of the pressure and flow that exists if gas is produced from the formation in many natural gas wells."

The back-pressure data is used as a basis for estimating the number of wells and the compressor capacities that will be necessary to complete successfully an intended gas-storage project.

Soviet Oil Industry

MUCH PROGRESS MADE IN 1935 AND 1936 EXPECTED TO YIELD NEW RESULTS

By WILLIAM SCHACK

ALTHOUGH completion of several important pieces of construction is announced by A. Efuni, assistant director of the chief administration of the Soviet oil industry, and although production for 1935 increased, it lagged far behind the rest of industry, and in new drilling at least fell short of its own schedule.

While the output of crude, 26,772,000 tons, was up five percent above the 1934 figure, the total industrial production advanced 23.6 percent. With the enormous increase of automobiles, tractors, Diesel engines and oil-consuming industrial enterprises, domestic demand for the products of the oil fields has risen correspondingly, with the result that the National Economic Plan for 1936, as reported by V. I. Mezhlauk, calls for one billion rubles to be invested in the oil industry and for a production of 30,000,000 tons, or an increase of 12 percent over the past year.

As for the chief refined products, 1935 figures for kerosene were 4,920,345 tons and for gasoline and ligroine, 3,086,614. These are to be increased in 1936, respectively, 13 and 27 percent, to 5,560,000 and 3,920,000 tons. The total output of the refineries for the past year was 21,453,000 tons, while for 1936 the mark is set at 25,100,000 tons.

V. Polyakov, chief engineer of the Central Administration of the Oil Industry, who stated in an interview that he felt the 1936 plan could be met and surpassed, pointed out some of the highlights of the past year. In the first place, to refute rumors that the Baku fields have been exhausted, he declared that two new oil-bearing districts were discovered near by, at Zykh and Kyzyl-Tegere. The first wells put into operation are reported to be yielding 1000 and 400-450 tons daily, respectively. Furthermore, Polyakov reports that new bores in the Baku area have also proved successful. The Lenin oil field, which has been abandoned and reopened more than 10 times since it was first tapped in the 18th Century, and has yielded some 200,000,000 tons of oil, recently turned up another oil-bearing layer in well number 975, where a single well is yielding 1000 tons a day. The same yield is reported from bore-hole number 405 in the old Bibi-Aibat field.

Although Baku is still the principal source, Polyakov declares that the Emba fields in Kazakstan, which lies between the Urals and the Caspian Sea, have developed to such a point that, together with the still more recently drilled fields of Bashkiria and Central Siberia, they will constitute a second oil base for the country. In the Emba region, three new wells at Kos-Chagyl are yielding more than 1000 tons each, and at Iskine there are wells which equal the output of the foremost gushers of Baku. In the Southern Uzbekistan fields, at Uch-Kyzyl, a new well spouted 10,000 tons of oil in 36 hours before it was capped.

Mention has been made of Bashkiria, which is looked to as a coming center of importance. Difficulty of access hitherto has hampered operations seriously. Nevertheless, production jumped from 70,000 tons in 1934 to 500,000 tons in 1935, and is scheduled to double this year. Ishimbaevo is the seat of operations thus far in this area. Drilling increased from 3500 to 20,000 meters in the past year. With its potential resources estimated at 20,000,000 tons, and new oil-bearing points already uncovered which will soon be ready for tapping, G. K. Ordjonikidze, Commissar for Heavy Industry, has had Bashneft (Bashkirian Oil), a special trust, organized to concentrate this particular task, although there is already Vostokneft to take care of Eastern oil.

Grozny Oil Trust reports opening up a new development at Malgobek, which is yielding 3500 tons daily. In the North Caucasus, the Maikop fields, which supply a high quality of oil yielding a maximum of gasoline, increased their output from 3000 to 3700 tons daily.

Mention has been made of the difficulties experienced in Bashkiria. Last year saw construction of Ufa-Ishimbaevo railroad, 160 kilometers long, which eliminated all that trouble, with the consequence noted, that both drilling operations and production jumped markedly.

New Pipe Lines

New pipe lines have also been laid down. The most important one is that completing the line between Guriev on the Caspian Sea and Orsk, in the South Urals. This links the Emba fields with the refinery at Orsk and connects then with points at which the oil is needed in the Ural and Volga region. Begun in 1932, this pipe line is 710 kilometers long, besides two branch lines connecting it with Kostchagyl, which is counted one of the richest spots in the Emba district, and Iskinie in the south, making a total length of 847 kilometers constructed of 12-inch pipe (weighing 60,000 tons), it has seven pumping stations and a capacity of 1,500,000 tons. The southwestern area of Siberia it traverses is an arid plateau, confronting the builders with numerous difficulties. Although the new pipe line materially lessens the transport problem in this crucial district, it does not completely solve it. New plans at the moment call for railway lines to be constructed between the numerous scattered fields of Emba and trunk lines.

Another important pipe line laid down in the last year was that between Grozny and Makhach-Kala,

thus providing an outlet for the Grozny refineries to the Caspian Sea. Formerly, Baku oil was shipped to Makhach-Kala. The new line, which is 159 kilometers long and has a capacity of 1,500,000 tons, passes through no fewer than 10 mountain streams, one of them, the Sulak, being powerful enough to push back its shoreline 1000 yards at high water.

More Refineries Built

In the construction of refineries much has been done in the past year. Four cracking plants have been added to the existing four at Saratov, and work on six others there is proceeding rapidly, which will increase the capacity of that organization to 2,750,000 tons. The Saratov combine draws its crude from the Ishimbaevo fields, which contains sufficient sulphur to cause great annoyance. A new process has been developed to meet this problem, and it is said to have proved satisfactory. The present capacity of the Saratov plants is 1,200,000 tons.

In accordance with the year's plan, four more units have been added to the cracking plant in Grozny. The same number of units have augmented the cracking plant at Baku, together with five special plants capable of treating 5,000,000 tons of crude, whose nature is not more specifically reported on.

In the Far East, likewise, a cracking plant has been built at Khabarovsk for the treatment of oil from Sakhalin Island.

The refinery recently started at Orsk, which consists of 16 cracking units and six other special plants, is treating Emba crude, supplying gasoline and kerosene for industrial and agricultural uses in the Urals and Siberia. Its capacity is rated at 1,000,000 tons.

Research Work

Experimental work of interest has been carried on in the past year, and to successful conclusions, it is reported. The Gas and Artificial Liquid Fuel Institute of Leningrad, for example, announces that it has perfected a method of extracting benzine from shale by direct distillation. The product obtained experimentally has been of sufficiently high grade to warrant its testing out as an automobile fuel and the construction of a plant to produce it on a commercial scale. In process of building now, the plant is to have a capacity of 120,000 tons.

The Leningrad Industrial Institute has discovered a method of recovering a practical fuel oil from peat tar, by-product in the destructive distillation of peat. It is reported that 40 tons of the peat tar yields 32 tons of the oil. The discovery is said to be of importance to the northern and central parts of Russia, such as the Leningrad province, which are remote from the oil-producing regions and have considerable peat reserves.

Kharkov Coal Institute has developed a method of producing benzine from lignite, or brown coal. This type of coal, which contains, according to V. Kopeliovich, director of the institute, more than 50 percent moisture and from 10 to 12 percent ash, making it a pretty poor fuel, will now be treated as a source of benzine. A plant is in process of construction at Kharkov to exploit the new method and is expected to be finished toward the end of this year. The deposits of lignite in the Ukraine are estimated at hundreds of millions of tons.

Geological exploration continues unabated, on an extended front. An expedition to the Arctic regions, between 75 and 77 degrees latitude, reported, after a 20 months' trip, that there were significant oil deposits over a large part of the territory between the Lena and the Yenissei rivers. Near the Taimyr Peninsula, the party made tests on the strength of which it believes that this section may become an important oil base in the Arctic area.

Near Perm an oil-bearing area of 100 square kilometers has been discovered. In the six square kilometer area where 11 wells have been completed, it is estimated that the deposits are from 12 to 15 million tons, and fully suitable for industrial exploitation. The depth of the oil layer is from 11 to 42 meters. Estimates of the oil reserves in this whole Krasnokamsk district run as high as 90,000,000 tons. The new field was discovered last summer, when engineers of the Kamsk Paper Combine, prospecting for water, found oil in a pit-hole at a depth of 150 meters. Oil men were at once dispatched to the spot to follow up the discovery.

Meanwhile, a young engineer by the name of Litvinov, has been exploring the sea bottom for oil. He apparently makes use of an electric apparatus to measure the resistance of the geological strata at a depth of 300 to 500 meters. This provides an index of the area of possible accumulation of oil. No results have been announced as yet.

The Kuznetsk Basin in Western Siberia is coming in for renewed attention. This is an important coal and mineral center, and as far back as 1932 Professor L. M. Gubkin pointed out the possibility of its being oil-bearing as well. In exploring for saprolite coal, parties have come upon asphaltites, liquid bitumen, oil and gas. Also, the general geological structure of the region is that peculiar to oil-bearing conformations. Deep exploratory drilling has been started, and developments are being followed with the closest interest by both the All-Union Academy of Science and the Chief Petroleum Administrative Board; for the transportation of oil from the Caucasus to this far-flung outpost in Siberia is a formidable and costly job. In order to avoid it, Kuznetsk has started a liquid fuel industry, utilizing bituminous coal as its raw material.

The chief point of interest here for the oil explorers is Barsass, which has long been known for its ashpaltites. It is located on the western slope of Kuznetsk Alatan, on the borders of the immense Kuznetsk Coal Basin. Geological surveys undertaken by Glavneft, the Petroleum Administrative office, in the past two years, have found an uninterrupted deposition of alluvial earth forming a series of undulating folds.

In this section there are also great layers of shale.

Finally, some new estimates of Soviet Oil reserves by Professor Gubkin are of interest. At a recent meeting of the Academy of Sciences, he declared that salt domes similar to those in southern Texas and Louisiana form the basic geological structure of the oil deposits in the Uralo-Emba region, which extends from the lower Volga to the Ust-Urt plateau. Over 260 salt domes with oil deposits of 600,000,000 tons have been surveyed in the central part of this region, and he estimates that there are no less than 1200 such domes, with at least 1,000,000,000 tons of oil, in the whole region. By exploiting only 10 of these domes, Professor Gubkin believes, an output of 2,500,000 tons per year could be obtained within the next two of three years, and by exploiting 100 of the largest domes, 25,000,000 tons a year, so that this area would rival Baku in importance.

Markets Unchanged

WEATHER CONDITIONS RETARD GASOLINE AND KEROSENE USE

THE markets have been largely marking time, but it is expected that some improvement may occur soon, as warmer weather appears over-due. The persisting cold weather over most of the country has retarded the markets for kerosene and tractor fuels as well as gasoline.

During the past week prices remained mostly unchanged, with the demand comparatively slow.

Texas Markets Disturbed

The Mid-Continent market picture still was marred by an unsatisfactory gasoline situation within Texas. Retail prices continued depressed in various sections of the state, as in the Houston area, where 11-cent postings were in evidence at independent stations, including 5 cents taxes. Low retail prices in the state normally reflect substantial output of hot oil in the East Texas district.

Such illegal production is being confined, however, largely within the Texas borders. On third-grade gasoline moving interstate from East Texas, the price has held at 5 cents a gallon. In the rest of the Mid-Continent, also, gasoline prices have not changed, as compared with a week ago.

Mid-Continent Prices

Late last week the third-grade gasoline, 62 octane and below, was priced f.o.b. Oklahoma refineries at 5 to 5⅛ cents. a gallon, while the regular grade, 63-70 octane, was 6 to 6⅛ cents. Those prices prevailed also in Kansas, North Texas, and West Texas.

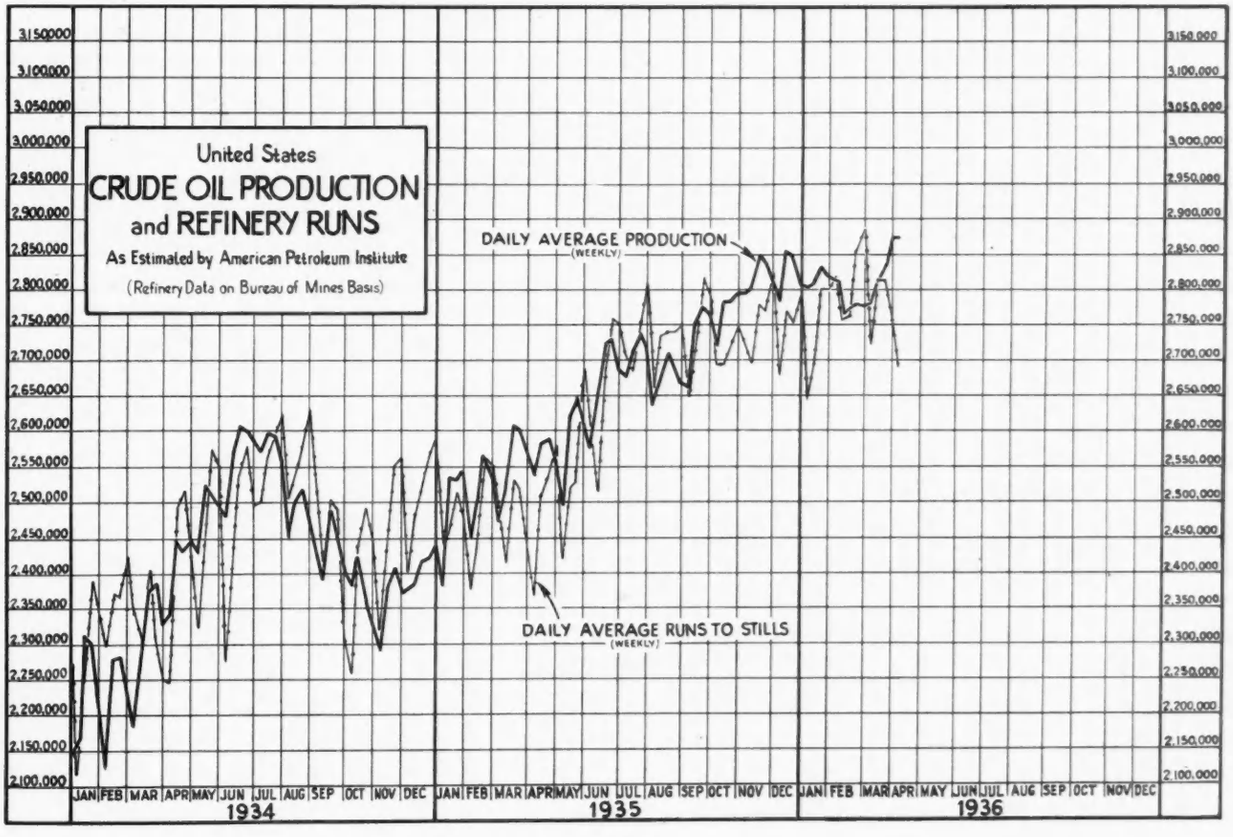
The kerosene market in the Middle West was held back again last week by persisting cold weather and wet fields, which interfered with farm activity. The supplies of kerosene appeared somewhat more plentiful. But the prices held unchanged. In the Chicago territory 41-43 water white kerosene continued as a week previously at 4¼ to 4⅜ cents a gallon, while 42-44 water white grade was 4⅜ to 4½ cents. Corresponding prices f.o.b. Oklahoma refineries were one eighth cent higher, whereas one week previously they had been the same as the Chicago prices.

The markets in California last week showed but little change. Retail postings were holding at recently improved levels. There was some anxiety, however, over the crude production situation. The state's output was above 575,000 barrels daily, and thus was about 25,000 barrels above the Bureau of Mines recommendation. It was thought, however, that the state might later compensate for the excess by cutting back production later in the month.

CALIFORNIA

Gasoline prices holding; crude output high

THERE is an optimistic feeling in California that new and higher prices for gasoline and other petroleum products will hold. Southern California, the hot bed of cut prices, is showing real progress toward stabilized prices. There are few cut price signs—that is, signs showing a price less than 13 cents for independent products. In a few instances, small independent service stations still are selling gasoline at around 11 cents, against a third grade price of 14 cents at major company



stations. At most of the more important independent service stations, the indepnedent product is selling retail at 13 cents. Most of the so-called secondary companies (subsidiaries of major companies), are holding at 14 cents, retail.

There is one worrying condition—the large production of crude oil. During the first few days of April, crude production has been running fairly close to 580,000 barrels a day. Operators have been notified by letter they are treading on dangerous ground. But in the past many operators in old heavy oil pumping fields have followed a practice of producing their monthly allowable during the first half of the month and then shutting in the pumpers completely. This partially explains the large production first part of the month. Also several new wells have been completed which helped to swell daily production for the state.

Off-shore shipments have been fairly satisfactory, although tanker rates have advanced to 80 to 85 cents a barrel to East Coast points. This is close to 2 cents a gallon. There are practically no tankers seeking charters. This high rate includes canal tolls and insurance.

LESS HOT OIL

TYLER.

CURRENT volume of illicit crude production in East Texas field is estimated at about 12,000 barrels daily. Plant operations remain at a low level, with only 16 refineries on the active list, according to a mid-week check by the railroad commission.

Plants operating in accordance with rules of the state and Federal Tender Boards are having no difficulty in selling their entire gasoline output at five cents per gallon. Gasoline that fails to conform with federal tender rules is commanding from 4¾ to 5 cents per gallon for truck movement.

Delivery of Rodessa crude to East Texas by the East Texas Pipe Line Company's eight-inch carrier which was placed in operation March 28 has been restricted to the authorized well allowable of the leases serviced by the company, since the Federal Tender Board refused to approve the company's tender application for back allowable oil.

East Texas Pipe Line Company has a contract to sell and deliver to the Tidal Pipe Line Company for the account of the Tide Water Oil Company 500,000 barrels of Rodessa crude, deliveries to be made at the Nettleton tank farm of the latter in the East Texas fields, then moved to the coast through the Texas-Empire Pipe Line Company's carrier. The original tender application for 120,000 barrels filed with the Federal Tender Board was turned down by the latter. However, the Texas Railroad Commission gave its approval April 7 through H. V. Hamilton, Tender Board chairman, on the movement of 50,000 barrels of Rodessa crude to East Texas.

East Texas Tank Car Shipments

Week Ending March 5, 1936

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	430	3,484,531
Fuel Oil	228	2,182,788
Casinghead Gasoline	188	1,550,265
Gas Oil	45	364,659
Distillate	38	307,655
Kerosene	37	293,872
Residuum	6	48,553
Crude Oil	4	40,536
Topped Crude	4	32,437
Naphtha	1	6,335
Total	981	8,311,631
Total Previous Week	1,027	8,758,334
Coastwise	398	.....
Intrastate	326	.....
Interstate	257	.....
Total	981	.....

FUEL BLENDING BILL

Solons plan to sponsor five-year investigation

WASHINGTON, D. C.

MEMBERS of Congress from the agricultural regions plan a drive to secure action on the bill introduced by Representative Lea of California, to establish a commission to make a five-year investigation of the possibilities of alcohol-gasoline blends, as soon as the House interstate and foreign commerce committee disposes of the measure to regulate natural gas pipe line companies.

The bill was introduced by the California congressman in February and was briefly considered, but no action was taken. Present plans contemplate the holding of hearings on the measure in the near future, if approval of administration leaders in Congress can be secured with a view to attempting its enactment before the end of the session.

A fuel research commission would be set up under the measure, consisting of the heads of various bureaus interested in the subject, to "investigate, develop and promote renewable sources of supply for fuel adapted to the use of internal-combustion engines; to improve fuels produced from such sources, and promote their use interstate and foreign commerce and in aid of such commerce; and to develop beneficial uses for the by-products resulting from the production of such fuels."

It was explained by Representative Lea this week that any new fuels developed by the commission could be sold to government agencies, thus providing for the making of actual road tests under all sorts of conditions.

One of the purposes of the study, he said, would be the elimination of carbon monoxide and the development of better anti-knock properties in which alcohol is said to be valuable.

The major purpose of the plan, however, is to develop uses for surplus farm products from which alcohol can be secured, and on this basis the measure has been given the approval of the Chemical Foundation, the Farm Bureau Federation and the National Grange. Officials of the Bureau of Standards also have indorsed the bill.

While designed to enlarge the mar-

Summary of Wells Completed in the United States Week Ending April 11, 1936

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1936	Total Completions this Date 1935
Alabama	....	....	....	....	.....	2	2
Arkansas	2	1	....	1	105	28	52
California	17	16	....	1	2,920	270	202
Colorado	1	....	....	1	.....	5	3
Illinois	....	....	....	....	.....	4	8
Indiana	6	1	1	4	60	66	48
Kansas	34	25	....	9	18,397	391	382
Kentucky	....	....	....	....	.....	39	40
Louisiana	27	15	6	6	46,270	265	220
Michigan	9	5	1	3	420	184	95
Mississippi	....	....	....	....	.....	1	7
Montana	3	3	....	....	170	24	17
New Mexico	11	10	1	....	31,050	129	77
New York	....	....	....	....	.....	....	....
Ohio	30	6	12	12	23	556	402
Oklahoma	47	32	4	11	95,596	704	601
Pennsylvania	....	....	....	....	.....	....	47
Texas	238	187	7	44	281,437	3,159	3,246
Utah	....	....	....	....	.....	....	....
West Virginia	19	5	13	1	10	177	138
Wyoming	....	....	....	....	.....	14	12
Total this week	444	306	45	93	475,458	6,008	5,581
Total last week	473	311	53	109	375,009	....	....
Total this year	6,008	3,985	621	1,402	.....	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending April 11	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	2	3	22	47	70
California	18	48	241	242	925
Louisiana	23	45	320	227	846
Kansas	54	85	481	415	1,204
Michigan	10	30	173	110	749
Oklahoma	92	152	752	641	2,311
Texas	179	539	3,567	3,845	10,800
Total	378	902	5,561	5,527	16,964

ket for farm products, Mr. Lea said, the bill has distinct conservation possibilities. The use of the new fuels contemplated under the plan would postpone that day when our resources of petroleum become exhausted. At the same time, early introduction of these fuels would permit their improvement gradually, during a period when the natural oil supply was still adequate, so that when the day arrived when synthenic fuels became necessary the transition could be made without derangement of the motor industry and the distress of motor owners.

The bill would provide a fund of one million dollars for use of the commission in carrying out its activities.

PRODUCTION RISES

Month opening brings gains in Oklahoma and California

UNITED STATES crude oil production last week, ended April 11, averaged 2,895,740 barrels daily. That was 40,740 barrels a day more than in the previous week, and 98,440 barrels per day more than the Bureau of Mines recommendation for April.

As compared with the previous week, the new production rates were higher in Texas, Oklahoma, and California, while Kansas and Louisiana showed declines. Outside of those five leading producing states the fluctuations were small.

The largest gain was that for Oklahoma, where output rose to 549,715 barrels daily from 527,400 barrels, an increase of about 22,000 barrels. California production was up 12,000 barrels at 573,000 barrels daily, and that of Texas was up about 6,000 barrels at 1,126,700 barrels per day.

Kansas output was down to 148,550 barrels a day from 151,775 barrels daily the week before. Louisiana was off about 4000 barrels at 205,050 barrels daily.

The Oklahoma production last week was about 25,000 barrels per day above the Bureau of Mines recommendation. But it is customary for the state to show an excess early in the month and later to compensate by underproducing.

California showed an excess of 20,400 barrels per day above the federal government advice. As in the case of Oklahoma, however, it is not uncommon for California to overproduce early in the month and then to cut back in the latter part of the month.

Texas production last week was about 4000 barrels a day more than the federal allocation. That was comparatively close adherence to the recommendation, considering the large volume of Texas output.

Kansas was 2550 barrels a day above its federal allocation in averaging 148,550 barrels daily.

Louisiana continued to show the most conspicuous overproduction above the Bureau of Mines recommendation, having averaged last week 44,150 barrels a day more than the allocation.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	BARRELS DAILY FOR WEEK ENDING April 11	April 4
TEXAS—		
Texas Panhandle	62,200	62,800
North Texas	58,100	57,700
West Central Texas	25,100	25,100
West Texas	177,300	176,200
East Central Texas	48,500	49,900
*East Texas Field	445,100	444,100
†South Texas	74,600	74,200
†Texas Gulf Coast	235,800	230,800
*Total Texas	1,126,700	1,120,800
OKLAHOMA—		
Oklahoma City	153,800	150,500
Seminole Area	138,740	131,275
Tatums	3,500	3,500
Lucien	12,750	11,250
Fitts	46,350	46,400
Edmond	13,375	5,650
Others	181,200	178,825
Total Oklahoma	549,715	527,400
KANSAS—		
Ritz-Canton	6,825	7,475
Voshell	3,300	2,825
Nikkel-Hollow	4,500	4,100
Sedgwick	5,625	5,950
Oxford	8,000	7,200
Burrton-Haury	14,050	14,250
Lorraine	7,750	8,675
Others	98,500	101,300
Total Kansas	148,550	151,775
LOUISIANA—		
North Louisiana	64,850	72,525
Louisiana Gulf Coast	140,200	137,100
Total Louisiana	205,050	209,625
ARKANSAS	30,125	30,100
CALIFORNIA—		
Long Beach	70,000	67,000
Santa Fe Springs	42,500	42,500
Huntington Beach	37,000	35,000
Dominguez	25,500	26,000
Inglewood	11,500	12,000
Ventura Avenue	34,000	33,800
Seal Beach	7,500	6,600
Midway-Sunset	50,000	48,500
Elwood	12,500	11,600
Kettleman Hills	77,500	76,200
Mountain View	26,500	27,500
Playa del Rey	13,500	13,000
Others	165,000	161,300
Total California	573,000	561,000
MOUNTAIN STATES—		
Wyoming	35,500	35,700
Montana	12,900	13,400
Colorado	4,900	4,400
Total Rocky Mountain States	53,300	53,500
NEW MEXICO	63,600	60,900
EASTERN STATES	106,600	102,500
MICHIGAN	39,100	37,400
*Total United States	2,895,740	2,855,000
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	15,000	15,000
Grand Total, including surreptitious production	2,910,740	2,870,000

† Coastal District of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills; Stocks of Finished and Unfinished Gasoline and Gas and Fuel Oil, and Cracked Gasoline Production, Week Ended April 4, 1936

(Figures in thousands of barrels of 42 gallons each, as reported to American Petroleum Institute)

DISTRICT	Daily Refining Capacity			Crude Runs to Stills		Stocks of Finished and Unfinished Gasoline				Stocks of Gas and Fuel Oil			Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
		Reporting				Finished								Reporting		
	Potential Rate	Total	%	Daily Average	% Operated	At Refineries	Terms. Trans. Pipe Lines	Unfinished in Naphtha Distillates	Total Finished and Unfinished	Gas Oil & Distillate	Residual Fuel Oil	Total	Potential Rate	Total	%	Daily Average
East Coast	612	612	100.0	479	78.3	7,442	11,153	1,179	19,774	2,795	3,694	6,489	534	534	100.0	94
Appalachian	154	146	94.8	82	56.2	1,658	983	294	2,935	331	187	518	79	78	98.7	15
Ind., Ill., Ky	442	424	95.9	379	89.4	7,920	2,735	1,017	11,672	1,257	1,649	2,906	349	348	99.7	118
Okla., Kans., Mo	453	384	84.8	236	61.5	4,823	2,321	724	7,868	693	1,778	2,471	256	228	89.1	63
Inland Texas	330	160	48.5	86	53.8	1,443	114	219	1,776	214	1,235	1,449	148	105	70.9	20
Texas Gulf	680	658	96.8	549	83.4	6,414	271	2,154	8,839	2,643	4,001	6,644	399	393	98.5	124
Louisiana Gulf	169	163	96.4	109	66.9	1,217	384	267	1,868	808	1,196	2,004	77	74	96.1	24
North La.,—Ark	80	72	90.0	39	54.2	224	58	119	401	19	291	310	46	44	95.7	8
Rocky Mountain	97	60	61.9	46	76.7	1,546	.....	92	1,638	169	562	731	46	39	84.8	14
California	852	789	92.6	492	62.4	9,908	2,005	1,061	12,974	.....	.....	70,799	280	280	100.0	66
Reported	.....	3,468	89.6	2,497	72.0	42,595	20,024	7,126	69,745	.....	.....	94,321	.....	2,123	95.9	546
Estimated Unreported	.....	401	.....	193	....	2,686	259	620	3,565	.....	.....	1,633	.....	91	....	34
*Estimated Total U.S. April 4, 1936	3,869	3,869	....	2,690	....	45,281	20,283	7,746	73,310	.....	.....	95,954	2,214	2,214	....	580
*Estimated Total U.S. March 28, 1936	3,869	3,869	....	2,765	....	46,392	19,112	7,508	73,012	.....	.....	96,009	2,214	2,214	....	590
U.S.B.of M., April 1935	.....	....	....	2,502	....	†37,867	†20,351	†6,175	†64,393	.....	.....	†97,727	.....	....	....	520

*Bureau of Mines basis currently estimated. †As of April 30, 1935.

GASOLINE TAXES

High rate of tax blamed for evasion epidemic

New York.—An epidemic of gasoline tax evasion scandals which has broken out almost simultaneously in four states is the direct result of excessive gasoline tax rates and of loopholes in tax laws, Director Baird H. Markham, of the American Petroleum Industries Committee, declared here today. The committee is aiding law-enforcement authorities of Tennessee, Mississippi, Kansas and Colorado in their efforts to prevent tax evasion and the resulting loss of state revenues.

Markham pointed out that Tennessee and Mississippi, where large-scale gasoline bootlegging and tax evasion rings have been revealed, have exceptionally high gasoline tax rates. Kansas and Colorado, where investigators have disclosed the loss of hundreds of thousands of dollars in tax revenues, have lower tax rates, but evasion has been accomplished through illegal refunds and exemptions obtained by fraud.

A legislative committee investigating evasion of Mississippi's 6 cents gasoline tax estimates losses at $2,000,000 annually, he said. Losses estimated to exceed $1,000,000 have been disclosed in Tennessee, where the state tax rate is 7 cents per gallon. Losses are placed at more than $100,000 in Colorado, which has a 4 cent tax, and at $1,000,000 in Kansas, whose 3 cent tax is believed to have been evaded on one-fourth or more of all gasoline sold.

"Excessive gasoline tax rates and the presence of refund and exemption provisions in the state laws invariably lead to bootlegging and evasion," said Director Markham. "Tax rates which exceed the legitimate profit on the sale of gasoline virtually put a premium on dishonesty, while their high cost encourages the consumer to file fraudulently exaggerated refund and exemption claims or to misrepresent uses to which the gasoline he buys is put. To expect human nature to resist the temptation to avoid or to evade a retail sales tax averaging 40 percent is asking too much.

"It is not merely the petroleum industry which is harmed by such racketeering. The consumers pay the gasoline tax, and when a dealer is crooked enough to cheat the state by pocketing the revenue, he is likely to have no compunction about cheating his customers. A favorite trick is to blend some inferior and tax-free product with good gasoline, so that to his profit from evaded taxes he can add the money saved by using the cheaper product.

"Natually the states lose the revenue from taxes which are evaded, and the motorist taxpayers do not get the roads that revenue would have financed. The net result is that everyone loses, except the racketeer.

"More and more states are discovering that reasonable gasoline tax rates, strong tax laws, and efficient administration are more remunerative than high taxes. Just as much revenue is collected, the public pays no more for its motor fuel, and the racketeer is driven out of business. Some states now are seriously considering the advisability of strengthening their gasoline tax laws in the belief that is one of the most effective ways to avoid revenue losses."

FIRST AID CONTEST

Rules issued for Houston oil show events

Houston. — In preparation for the daily First Aid Contests to be held in connection with the Seventh Oil Equipment and Engineering Exposition at Convention Hall, Houston, Texas, during the week of April 20 to 25, inclusive, a 24-page mimeographed pamphlet has been compiled to govern the events. The demonstration rules are based on "United States Bureau of Mines Handbook" (1930 Edition) and the "American Petroleum Institute Revised Contest Outline."

The First Aid Contest Demonstrations are sponsored by Harris County Emergency Corps. Inc., Oil Equipment and Engineering Exposition, and the Houston Safety Association (Division of Houston Chamber of Commerce.)

Contesting Companies will draw by lot for dates to compete and problems. A list of 20 problems will be furnished each team by the committee when entry application is received. These will be the only problems worked during the entire contest. Each team will work four problems, including artificial respiration problem. Not more than five teams will compete on any one date and a committee of ten judges will be in absolute charge of judging, assisted by chief judge and two supervising judges. Policing, recording and distribution of prizes will be under the jurisdiction of the Contest Committee.

Four prizes will be issued to the winning teams. The first three will be for the efficiency of the competing teams and the fourth for artificial respiration.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to April 10, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
Texas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .93	1- 9-36
West Texas				
Ector, Pecos, W'kler Crane, Upton, Howard and Glasscock	29— .76	2¢	36— .90	1-14-36
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Texas Gulf Coast				
Anahuac-Dickinson	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below — 17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	*.90			1- 9-36
Saxet	*.90			1- 9-36
Mirando	*.85			1- 9-36
Pettus	*1.25			1- 9-36
Salt Flat	*.97			1-14-36
Darst Creek	*.97			1-14-36
Port Lavaca	*.97			
Plymouth	*.90			12-17-35
Arkansas				
El Dorado (Light) and Rainbow	25— .78	2¢	40— 1.10	1-10-36
El Dorado East Field and Smackover	*.75			1-10-36

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
North Louisiana	25—$0.78	2¢	40—$1.10	1-10-36
Urania	*.97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa, Cameron Mds.	Below 19— .82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.28			1- 9-36
Grass Creek (Light)	*1.28			1- 9-36
Grass Creek (Heavy)	*.58			1- 9-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.25			1- 9-36
Lance Creek	*.90			1- 9-36
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.45			9-29-33
Ponders	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	*.75			9-29-33
Mid-West States				
Lima	*1.25			1-10-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-36
Western Kentucky	*1.23			1- 9-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.42			1-13-36
Michigan				
Central Michigan	*1.12			11- 7-35
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	‡2.10			9- 9-33
Oil Springs	‡2.17			9- 9-33

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut °40
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up °28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up °9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up '5

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and ⅜ of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
° Signal Hill 26 gravity.
' Seal Beach 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill*	Seal Beach Alamitos Heights*	Huntington Beach*	Inglewood	Playa Del Rey*	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs*	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.80	$.79	$.78	$.79	$.80	$.76	....	....	$.80	$.76	$.76	$.77	$.78	.....	$.70	....	$.70	$.70	$.70	....
15-15.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
16-16.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
17-17.9	.80	.79	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
18-18.9	.80	.79	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
19-19.9	.82	.79	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	.71	$.70
20-20.9	.85	.79	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21-21.9	.88	.79	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	.....	.73	.82	.82	.74	.70
22-22.9	.92	.82	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	.72
23-23.9	.95	.86	.96	.99	1.02	.96	$.84	....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	.86	.79
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	....	1.02	.95	....	.89	.99	.86	.....	.88	1.01	.98	.90	.83
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	....	1.05	.98	....	.92	1.03	.90	.....	.91	1.06	1.02	....	....
27-27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	....	1.02	....	.96	1.06	.95	.....	.95	1.10	1.06	....	....
28-28.9	1.14	1.10	1.14	1.15	....	1.14	1.07	....	....	1.06	....	.99	1.10	.99	.....	.99	1.15	1.10	....	....
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	....	....	1.09	....	1.03	1.14	1.03	.....	1.02	1.20	1.14	....	....
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	....	....	....	1.07	1.17	1.08	.....	1.06	1.25	1.18	....	....
31-31.9	....	....	....	1.24	Line	1.24	1.22	Ship	Kettleman Hills			1.11	1.21	1.12	.....	1.09	1.29	....	....	....
32-32.9	....	....	....	1.27	....	1.27	1.27	....				1.14	1.25	1.16	.....	1.13	1.34	....	....	....
33-33.9	....	....	....	....	....	....	1.32	$1.28		1.19		1.18	1.28	1.20	.....	1.17	1.38	....	....	....
34-34.9	....	....	....	....	....	....	1.37	1.32	....	1.23	....	1.22	1.32	1.25	.....	1.20	.....	....	....	....
35-35.9	....	....	....	....	....	....	1.42	1.35	....	1.27	....	1.25	....	1.29	.....	....	.....	....	....	....
36-36.9	....	....	....	....	....	....	1.46	1.39	....	1.31	....	1.29	....	1.33	.....	....	.....	....	....	....
37-37.9	....	....	....	....	....	....	1.51	1.43	....	1.35	....	1.32	....	1.37	.....	....	.....	....	....	....
38-38.9	....	....	....	....	....	....	1.56	....	....	1.39	....	1.36	....	1.42	.....	....	.....	....	....	....
39-39.9	....	....	....	....	....	....	1.61	....	....	1.43	....	1.40	....	.....	.....	....	.....	....	....	....
40-40.9	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	.....	.....	....	.....	....	....	....

* Price effective March 6, 1936.

WORLD DEVELOPMENTS and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Philippine Oil

LEASE VALIDITY QUESTION RETARDS ISLAND DRILLING

Exploratory drilling in the Philippine Islands, anticipated as an immediate eventuality as a result of a leasing boom during the middle of 1935, has been retarded pending investigation by the government of identities of several lease takers and the nature of the leases held. Sixty-three leases were taken in the mid-summer boom; all but 32 of these have been surrendered or cancelled by the government.

In answer to a query directed to the proper authorities THE OIL WEEKLY last week received from Manila a specially-prepared report embracing the following information:

Without the benefit of any spectacular discoveries of oil in the Philippine Islands, interest in the oil possibilities of the islands developed suddenly and simultaneously about the middle of 1935, with the result that 26 corporations were registered by the end of the year to engage in the exploitation of oil lands. These corporations applied for and were granted 63 exploratory leases covering nearly one million hectares (about 2,470,000 acres). In addition 10 exploration leases, covering 329,000 hectares, were granted to a company incorporated in the United States. These leases, in accordance with Philippine laws covering petroleum lands, were for one year.

Lease Laws

Laws of the islands provide the lessee must pay a deposit of five centavos per hectare, a deposit to be forfeited in case lessee does not begin exploration work within six months from the date of the lease. Exploration areas are leased by the government in blocks of not more than 400 hectares each for individuals, or 1200 hectares each for partnerships or corporations, and no application for more than 36 blocks in any province is granted. A few remote provinces have been made exceptions to the latter condition, and in them 60 blocks is the limit.

During the term of the lease the lessee is given the preference right to apply for and secure a lease for drilling purposes covering not more than 15 blocks, out of his 36. In the case of corporations the limit in any province is 43,000 hectares for exploration and 18,000 hectares for drilling.

Drilling leases are not to be confused with exploratory leases because the former are, at present, granted for five years and are renewable after five years up to a total of 50 years, provided a producing well has been completed during the first period.

If drilling has not commenced within 18 months from the date of the lease, or within three years in case the leasehold is more than 25 kilometers from the coast, rentals must be paid to the government until drilling operations are commenced. On the other hand, in the event of successful development and operation of the leasehold, royalties ranging from 8 to 12½ percent must be paid the government. If a producer is completed on privately-owned land, the land owner will be given 40 percent of the government's share according to the present petroleum law.

The petroleum law of the Philippine Islands is now undergoing revision in the hands of a committee. These revisions, together with possible amendments, probably will be introduced in the next session of the national assembly, but it is anticipated in Manila that there will be only two changes. One likely change is a clause confirming the right to apply for leases to citizens of the Philippine Islands and the United States; the other is a provision that the drilling lease shall be for 25 years, renewable once.

Lessees Investigated

Public interest aroused in oil exploration in the Philippines brought to the government's attention the fact that 12 corporations, which had been granted 21 exploration leases covering 684,000 hectares, were incorporated by the same small group of well known American and Filipino business men. It was felt that this gave control over too large an area to one small group of men and that the action of this group in incorporating a number of companies to take out leases was in contravention of Section 13 of the Corporation Law (Act No. 3518). This section provides in part:

"It shall be unlawful for any corporation organized for the purpose of engaging in agriculture or in mining to be in any wise interested in any other corporation organized for the purpose of engaging in agriculture or mining;

"It shall be unlawful for any person owning stock in more than one corporation organized for the purpose of engaging in agriculture or mining to own more than 15 percent of the cap-

Venezuela

APRIL 19 CRITICAL DATE FOR FOREIGN OPERATORS

Interests active in development of oil production in Venezuela are uneasy about possible results which may arise from the presidential election in that country April 19.

If the clique, antagonistic to, or seeking to change, the general tone of agreements between the late President Gomez and foreign oil operators goes into power April 19, there is a possibility of higher surface taxes and royalties, to say nothing of the possibility of increased difficulty with organized labor, the existence of which the late dictator is reputed not to have toleated.

Under the provisional government of General Lopez Contreras labor unions have sprung up in Venezuela. The presence of communist agitators directing efforts against the oil companies particularly is reported.

Subsidiaries of Standard Oil Company of New Jersey, Gulf Oil Corporation, Royal Dutch Shell, and other oil companies have contributed through taxes and royalties the bulk of the national income of Venezuela for years. One company paid the government last year in excess of 20 percent of its gross from operations in Venezuela, according to an article which appeared in a recent issue of the Wall Street Journal. The late President Gomez frankly attributed most of the progress of industry, communication, education and scale of living in Venezuela during the current century to the advent and activities of foreign oil companies, particularly those of American ownership.

ital stock then outstanding and entitled to vote of each of such corporations;

"It shall be unlawful for any corporation to own in excess of 15 percent of the capital stock then outstanding and entitled to vote of any corporation organized for the purpose of engaging in agriculture or in mining;

"Any stockholder of more than one corporation organized for the purpose of engaging in agriculture or in mining may hold his stock in such corporations solely for investment and not for the purpose of bringing about or attempting to bring about a combination to exercise control of such corporations, or to directly or indirectly violate any provisions of the Public Land Law."

Cancellation of Leases

The secretary of justice of the Philippines, after an investigation, recommended cancellation of the 21 leases referred to above, on the ground that there was a manifest evasion of the restrictive provisions of the law and regulations on the disposition of oil and mineral lands, and notably an evasion of that provision of the corporation law making it unlawful for any stockholder of more than one corporation engaging in mining to hold his stock for the purpose of attempting to bring about a combination to exercise control of such corporations, or to violate any of the provisions of the public land law.

At the same time the secretary of justice found that an American company, which had taken out 10 leases, had done so in contravention of the law making it illegal for any corporation to own in excess of 15 percent of the capital stock of any corporation organized to engage in mining. Technically, the leases granted to the American company may be held illegal under that provision, since the company is owned by two large American oil companies, each holding 50 percent of the stock.

Accordingly, the secretary of justice recommended that the 21 leases granted to the local group and the 10 leases granted to the American company be cancelled. Thus, there remain only 32 leases outstanding of the original 63, and even these are still subject to investigation.

It is understood locally that no further leases will be granted by the government until a new law, providing for the centralized administration of mines and other sub-soil deposits, is enacted by the national assembly.

Intact Drilling Leases

There are only four drilling (not exploratory) leases in effect in the Philippines today. Far East Development Company has a lease on 390 hectares near San Narciso, Tayabas. Toledo Oil Development Company has a 300-hectare lease near Toledo in Cebu. H. V. Campbell holds a 210-hectare lease near Barili in Cebu, and Julian Danon has a lease on 200 hectares in the same neighborhood.

Of the above, it is understood the Toledo Oil Development Company has a shallow well yielding a negligible amount of oil daily (a few gallons, according to reports). None of the others has been successful thus far in obtaining commercial production on Cebu or Tayabas.

Although a recent issue of THE OIL WEEKLY carried a statement by one of the world's leading geologists declaring there was good reason to believe in the possibility of the existence of petroleum reservoirs in the Philippines, local geological reasons as well as proximity to oil production in the East Indies, the past history of exploratory drilling in the islands is not encouraging.

Development History

Richmond Petroleum Company spent considerable money (more than P 2,000,000) a few years ago, drilling for oil on the Bontoc Peninsula. It explored other areas also. The drilling did not reveal the presence of oil in commercial quantities. Geologists for other companies have done some exploration work in other sections of the islands without encouraging findings.

The geological structure of the islands is said to be not dissimilar to that of Borneo and other oil-producing sections of the East Indies, but it has been so faulted and folded that some engineers are skeptical as to the likelihood of any fields of importance being found. Another drawback is found in the general opinion that there is a heavy overburden covering most of the islands, so that a favorable, unfaulted structure would be hard to find even if it did exist. Whether geophysics can handle this latter problem of the search for oil in the Philippines has not been proven locally.

MEXICO SEVENTH

Small flush allows nation to hold rank

Final figures from the department of petroleum, secretariat of the national economy, prepared for THE OIL WEEKLY, indicate Mexico's production of crude oil in 1935 exceeded that of 1934 by 2,062,956 barrels, the 1935 output being 40,234,902 barrels of 42 U. S. gallons each as compared with 38,171,946 barrels output in 1934. These figures allowed Mexico to hold rank as seventh among oil producing nations and continue the upward swing of the production curve which began at the end of 1932.

It is unusual that the 28,444 barrels of flush oil added by new completions in Mexico during the year was sufficient to not only maintain production at better than its old rate, but to result actually in a net gain for the year slightly in excess of two million barrels. This fact apparently bespeaks a most gradual decline in settled production so far as the average well in Mexico is concerned. During December, 1012 wells were on production in Mexico, each yielding an average of 116.8 barrels per day. Of these, 541 were in the heavy oil district and 471 in the light oil district. Wells in the heavy oil district averaged 45.22 barrels per day, and each well in the light oil district averaged 199.07 barrels per day.

Poza Rica field in Veracruz state leads the nation's producers, yielding during 1935 a total of 7,294,959 barrels, or better than one sixth of Mex-

MEXICO

Settled Production Situation
(Figures in U. S. Barrels)

FIELD	Total Production In 1935	Daily Average In December, 1935	Total Wells On Production In December, 1935	Average Daily Production per Well in December, 1935
Heavy Oil District:				
Altamira	189,964	466.21	8	58.24
Ebano	2,085,399	3,733.36	67	55.66
El Limon	300,259	.....	.....	.....
Cacalilao	3,605,227	9,387.07	162	57.93
Panuco, Miscel	3,903,203	9,844.22	251	39.18
Topila	324,866	881.60	49	17.98
San Geronimo	53,088	175.67	3	58.55
San Sebastian	19,449	12.13	1	12.13
Heavy Oil District, Total	10,481,455	24,500.55	541	45.22
Light Oil District:				
Comales	5,636	.....	.....	.....
Dos Bocas	25,726	72.20	1	72.20
Chiconcillo and San Miguel	69,662	175.05	9	19.43
Tepetate, Chinampa, Amatlan Zacamixtle	5,559,951	17,693.32	102	173.41
Toteco, Cerro Azul	2,770,927	9,177.86	43	213.41
Tierra Amarilla	38,193	108.94	8	13.58
Moralillo	34,362	85.98	1	85.98
Alazan	197,720	546.60	2	273.30
Potrero del Llano	488,909	1,004.32	9	111.58
Cerro Viejo	371,544	1,000.67	12	83.34
Tierra Blanca, Chapopote, Alamo	1,991,370	6,716.27	24	279.84
Jardin	58,975	149.07	5	29.81
Paso Real	470,976	1,265.29	21	60.19
Mecatepec	24,506	51.70	2	25.85
Poza Rica	7,294,959	26,140.79	10	2,614.07
Furbero	42,501	4.21	6	0.69
Tonola	3,907,731	10,496.94	138	76.04
El Plan	5,616,901	16,949.66	27	627.74
Filisola	782,281	2,126.39	51	41.63
Teapa	38	.....	.....	.....
Tecuanapa	63	.....	.....	.....
Acalapa	126	.....	.....	.....
Light Oil District, Total	29,753,447	93,766.03	471	199.07
Totals, All Mexico	40,234,902	118,266.58	1,012	116.80

ico's crude oil. At the close of the year it was producing 26,140 barrels per day from 10 wells, 4 of which were listed among 1935 completions. These wells are yielding better than 2600 barrels each per day on chokes. Yet the 4 producers among completions during the past year had an aggregate initial of only 8730 barrels, or slightly less than 2200 barrels each.

Poza Rica will yield in 1936, based only on the average daily production in December, a total of at least, 9,541,100 barrels, roughly two and a quarter million barrels more than it produced in 1935, a possibility which will keep it in the limelight of international oil market activities at least for another year. In the light of current conditions in the field, this is a conservative statement, as there are only 10 producers there thus far and definition has not been established.

Drilling activity in Mexico continues to be centered largely in the Panuco district, miscellaneous fields of which accounted for 26 out of the nation's 80 completions during the year. Yield of heavy oil from the Panuco district miscellaneous fields in 1935 totaled 3,903,203 barrels out of the heavy oil district's total of 10,481,455 barrels. Cacalilao took second place in the district in production with an annual recovery of 3,605,227 barrels and a completion record of 13. From the standpoint of producers completed, it was more successful, accounting for 9 new oil wells against 8 for the miscellaneous fields of Panuco district.

Summary of field operations and production by fields for 1935, together with the daily average output per well in the more important fields of Mexico, appear in the accompanying tables.

New High Record

CITY RUSH PUTS STARTS UP; COMPLETIONS ALSO HIGH

OKLAHOMA

WEEKLY STAFF REPORT

Tulsa.—As scouts rushed to keep up with new activity in the Oklahoma City district, the week came to a close with a record of the largest number of first reports that Oklahoma areas have experienced in several years. New work in the "Mansion Area" was largely responsible for the outstanding lead which Oklahoma County took with 48 of the total of 92 first reports in the state. Some of these probably had been made during the preceding week but could not be verified in time to be included in the reports for that period. Osage County again neared the leading position when it had 10 first reports, and Pontotoc County was third on the list with eight. Hughes and Seminole Counties accounted for 5 first reports each; Creek County had 3; Carter, Marshall and Pottawatomie Counties, 2 each; and Kiowa, Tillman, Comanche, Logan, Okfuskee, Okmulgee and Pawnee Counties, 1 each.

Completions also continued above normal when 51 operations reached the final stage. Of these 32 were oil wells with total initial rating of 95,596 barrels, 4 were gas wells with combined initial volume of 11,250,000 cubic feet, 11 were dry holes, and 4 were abandoned locations. Completed drilling involved 145,231 feet, of which 9258 feet was in two wildcat tests and 3004 feet in two old wells.

BRAZILIAN PROSPECT

Additional information concerning commercial possibilities of Compania Petroleo Nacional's oil prospect in the Riacho Doce area, near Maceio, state of Alagoas, Brazil, will be available by late April or early May, time set for conclusion of preliminary core drilling and geological work. An official government credit of $10,855 was made available to further preliminary work, the drilling contract portion of which was awarded to Piepmeyer and Company, drillling contractors of Cassell, Germany.

Mexico

Summary of Field Operations for 1935

FIELD OR STATE	Completions	Oil Producers	Gas Wells	Failures	Initial Production	Total Production In 1935*
Lampazos	1			1		
General Bravo, N. L.	2		1	1		
Reynosa	1			1		
Mier, Tamps.	1			1		
Camargo, Tamps.	2		1	1		
Aldama, Tamps.	2			2		
Altamira, Tamps.	2			2		189,964 (H)
Cacalilao, Panuco	13	9		4	290	3,605,227 (H)
Panuco District, Panuco	26	8		18	1,439	3,903,203 (H)
Toteco, Veracruz	1			1		
Cerro Viejo, Veracruz	2	2			365	371,544 (L)
Palo Blanco, Veracruz	1	1			101	
Poza Rica, Veracruz	5	4		1	8,730	7,294,959 (L)
El Burro, Isthmus	5			5		
El Plan, Isthmus	10	8		2	17,487	5,616,901 (L)
Acalapa, Isthmus	1	1			32	126 (L)
Arroyo Blanco, Isthmus	1			1		
El Tigre, Isthmus	1			1		
Rodriguez Clara, Isthmus	1			1		
Acayucan, Isthmus	1			1		
Huimanguillo, Tabasco	1			1		
Totals	80	33	2	45	28,444	None

*For production on other fields see accompanying table on production.
(H)Heavy oil district.
(L)Light oil district.

FITTS IMPETUS

Completions in Hunton lime are encouraging

Ada, Okla.—Several important completions in the Fitts pool and the showing encountered in an important wildcat test in northern Coal County were the featured items of the week from the increasingly important Ada district. Development of Hunton lime production in the eastern part of the pool was being given considerable impetus as large wells were completed in that formation along with other completions in the underlying Bromide formation.

E. H. Moore et al's Harper 5, SW NW NE 29-2n-7e, in the eastern part of the Fitts pool, is one of the largest Hunton lime wells in the area, with an initial yield of 558 barrels in 6 hours through 2½-inch tubing. Top of the lime was encountered at 3470 feet and penetrated to 3555 feet, at which depth it was treated with 4000 gallons of acid.

Another completion looked upon as being one of the most important in the pool during the week was H. L. Blackstock and J. J. Deaner's Moody 1, NE NE NE 27-2n-7e, northeastermost drilling well in the pool. After drilling to 4270 feet in the Bromide formation, it was treated with 5000 gallons of acid and responded with a flow of 215 barrels the first hour, 107 bar-

Carter Oil Company et al's Williams 1, Simpson discovery well in the old Fox pool, Carter County, Oklahoma. High pressure pumps were set about 100 yards from the well and connected to the well-head through lines shown in the right foreground.

rels the second, and 85 barrels the third, flowing through the tubing. The derrick was skidded 75 feet to the north where a Hunton lime test will be drilled.

Shell Petroleum Corporation's Hill 3, SE SE NW 30-3n-10e, 8 miles northeast of the town of Centrahoma in northern Coal County, was the most interesting wildcat test in the state as it prepared to core ahead below 5597 feet after having a small showing of oil in Viola lime at that depth. This test encountered a great thickness of Atoka formation and was running so low several weeks ago that its chances for production seemed remote. However, the bit went from beds of that series into basal Cromwell sand, missing several hundred feet of the normal section and then apparently running structurally high. The nearest test with which it can be compared is Carter Oil Company et al's Thompson 1, C SL NE NW 34-2n-9e, a wildcat test which headlined the news for many weeks during the latter part of 1935, but which was abandoned at 7126 feet in January, 1936. Hill 3 encountered top of the Viola lime at 5448 feet or minus 4682 feet, compared to 5970 feet or minus 5271 feet in Thompson 1, thereby correlating 589 feet higher on that formation. Oil stained cuttings previously have been recovered at two points in Viola lime. Top of the Hunton lime was logged at 5281 feet with a small showing of oil from 5351 to 5357 feet. Sylvan shale was logged from 5357 feet to top of the Viola lime at 5448 feet.

Six miles southwest of Atoka in western Atoka County, Vierson et al were shut down at 4930 feet and probably will abandon at that depth Williams 1, NE SW NW 34-2s-10e. It had Wapanucka lime at 3910 feet and a small amount of gas from 4100 to 4115 feet.

The Branstetter pool, west of Skiatook in southeastern Osage County, received its second Arbuckle lime well early in the week with the completion of Branstetter et al's Osage 2, SE NW SE SW 28-22n-11e. Flowing natural through 6⅝-inch casing, the well averaged 150 barrels per day from the lime at 2066 to 2082 feet. After tankage is completed the well will be deepened before further testing. Associated with Branstetter, who is mayor of Skiatook, are E. M. Williams, a city councilman, and Bay Oil Corporation.

PERMITS DROP

Austin, Texas.—The Texas Railroad Commission approved 179 permits last week for drilling new wells in Texas. The fact that this tabulation did not include the special exceptions granted late in the week was the cause for the sharp decline from the week before, when 360 permits were granted.

North Texas reported 71 new locations, which included 34 in Archer County and 29 in Young County. Southwest Texas reported 34 permits with 16 in Duval County. West Texas listed 23 new locations, and there were five in the Panhandle.

LABOR SHORTAGE

Not enough men or rigs for Oklahoma City rush

Oklahoma City.—Governor E. W. Marland's controversy with the municipal and county governments regarding the drilling of state lands near the capitol building and executive mansion probably was highlight of the week in the Oklahoma City district where locations were being made so rapidly that scouts were having difficulty in checking them. Operators desirous of starting tests immediately were experiencing even more difficulty in obtaining the services of drilling contractors, and there was not enough labor to carry out instructions as to the digging of cellars and pits.

Barnsdall Oil Company had only a short wait before the potential it recently obtained an interest in, through purchase of the properties of Midway Oil Company, received a sudden boost. British American Oil Producing Company and Barnsdall Oil Company's Roanoke 1, NW NE NE SE 22-12n-3w, was the first well to come in after conclusion of the transaction and made a potential rating of 21,136 barrels along with 17,000,000 cubic feet of gas. It was drilled to 6493 feet, 93 feet in the Wilcox sand. The same operators' Piersol 2, NW SE SE SE 22-12n-3w, was being connected up to drill in under pressure.

Edmond Pool

Marathon Oil Company's Dahl 10, NE SE SE 31-10n-2w, northwest diagonal offset to the discovery well in the Edmond pool of northwestern Oklahoma County, was being rated the biggest gas well in the pool with a gauge of 100,283,000 cubic feet. Checked on the upper markers, this well was structurally the second highest test ever drilled in the pool. However, Wilcox sand did not show for oil production and drilling was continued to 7309 feet in Arbuckle lime. It was plugged back to 6400 feet when no production was found in the lower Simpson or Arbuckle lime.

Cleveland County

After lagging for many months as tests were drilled in an effort to locate the "structure," development in the Moore pool of northern Cleveland County took a spurt during the week with the commencement of five new operations. The pool was discovered by Sinclair Prairie Oil Company et al's Franklin Community 1, SE NW SE 21-10n-2w, five miles northeast of the town of Moore and 4½ miles southeast of the south end of the Oklahoma City pool along the Nemaha Granite Ridge trend. The well was completed in June, 1935, flowing at the rate of 150,000,000 cubic feet of extremely wet gas which subsequently tested about 2000 barrels of 67.2 gravity material with a gas output of 25,000,000 cubic feet. Production is from second Wilcox sand at 7270 to 7291 feet, the total depth.

The next test on the community block was Lizzie Hussman 1, SW SE SW 21-10n-2w, a half mile southwest of the discovery well. It topped the second Wilcox sand at 7498 feet, was drilled to 8025 feet, plugged back to

test upper showings and abandoned after proving to be several hundred feet lower than the discovery well. Slightly over a mile to the south and slightly east, Hall & Briscoe, Inc., et al's Fant 1, SW SW NE 27-10n-2w, outside the community block, topped second Wilcox at 7500 feet and was abandoned at 7511 feet in December, 1935. The recent initial testing of Community Marvel 1, NW SW NE 21-10n-2w, three locations north and one west of the discovery well, establishes the area as one of large oil production and is the incentive to the new activity. Community-Rice 1, NE NE NE 28-10n-2w, a half mile southeast of the discovery well, topped Viola lime at 6970 feet and cemented 9⅝-inch casing with 3000 sacks at 6991 feet. It was correlated as being a few feet lower than the discovery well and a few feet higher than Community Marvel 1 on top of Viola lime. Late in the week it was drilling at 7203 feet and expecting second Wilcox sand at about 7290 feet.

The new operations are Hussman, NE NE SW 21-10n-2w, one location north and two west of the discovery well, and Ira B. Peaches 1, NE SE NW 21-10n-2w, west offset to Marvel 1 which has been killed with mud so that drill pipe could be removed from the hole. On a test last week it made 1053 barrels of high-gravity oil in 6 hours, flowing through 3½-inch drill pipe, the tool joints of which have an internal diameter of only 1¾ inches. Three other locations have been announced as tentative, pending outcome of Community Rice 1.

Billings Area

The hazards involved in Wilcox sand exploration in the old Billings area of northwestern Noble County were illustrated during the week when Tide Water Oil Company et al failed to find anything of importance in T. P. O'Neil 1-A, SE SW NE 16-23n-2w, a half mile north and less than a quarter mile west of the recent large Wilcox sand completion of Phillips Petroleum Company, Shell Petroleum Corporation et al. The Tide Water test went into basal Simpson at 4304 feet, and set 8⅝-inch casing at that point with total depth at 4388 feet. With the plugs drilled and the hole cleaned out to 4375 feet, no showings of oil or gas had been reported.

Fox Has Big Flow

SIMPSON DISCOVERY WELL RATED UP TO 8000 BARRELS

Ardmore.—Carter Oil Company et al's Williams 1, SW NE SW 27-2s-3w, Simpson discovery well in the old Fox pool of northwestern Carter County, was the feature well in the Mid-Continent during the early part of the week when it flowed 265 barrels of 40.6 gravity oil the first hour after 2½-inch tubing had been run to 8062 feet, 43 feet off bottom. The test was drilled to 8105 feet with 10½-pound mud after it had tried to blow out at 8067 feet with 10-pound mud. It was then washed in with water. During the second hour it produced 140 barrels, flowing through a choke, and on the basis of this initial performance was estimated capable of doing from 6000 to 8000 barrels per day. However, on a subsequent 24-hour gauge it yielded 3510 barrels, flowing through the casing and tubing. Gauges the first 3 hours of this period were 305 barrels, 215 barrels and 218 barrels, respectively. During the 24-hour period ending at 7:00 a.m., Wednesday the yield was 2220 barrels and for the period ending at 7:00 a.m. Thursday, the latest available at this writing, the gauge was 1904 barrels, 4 hours of the period being through the tubing and the remaining 20 hours through casing and tubing. It is reported that an acid treatment will be given the well and in view of the fact that production is coming from limestone or dolomitic limestone the yield should be materially increased.

Gulf Oil Corporation has staked location for A. Johnson 1, C SW SW 28-2s-3w, a half-mile southwest of the discovery well. It is to go to the deep horizon. Although rumors have persisted that several other deep tests would be started as soon as Williams 1 had been completed no other actual reports had been received late in the week.

Love County

Sinclair Prairie Oil Company's Stockton 1, SE SE SW 26-6s-2w, 16 miles northwest of Marietta in northwestern Love County, was drilling below 7165 feet and encountering no difficulty. This test reached that depth last December but drill pipe was stuck and the hole eventually plugged back to 5406 feet and new hole drilled from that point. Five miles northeast of Marietta in northeastern Love County, Amerada Petroleum Corporation and Stanolind Oil & Gas Company were shut down temporarily at 7047 feet in Westheimer 2, SW SE SW 27-6s-2e. Geologically this is one of the most interesting tests in the southern part of the state. It topped the Simpson Group at 3515 feet but encountered dips as high as 85 degrees and apparently has drilled a considerable amount of hole almost parallel to the bedding planes. When the hole had been drilled to 6797 feet 10-inch casing was cemented at 2427 feet on top of the Viola lime and 8⅝-inch was set at 5015 feet. This is one of the few instances in the Mid-Continent area when two strings of casing have been run without additional drilling between the running of two strings.

In the next township north of Stockton 1 but over the line in southern Carter County, Carter Oil Company et al were drilling below 2960 feet in Walker-Voorhees 1, C SE SW 34-5s-2w. It is near the center of a large block which Carter Oil Company spent several months assembling and which is reported to cover a large seismograph "high."

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BRYAN COUNTY—		
Smith, Henry 1, cnw ne 10-8s-7e	lcn.	abd.
CARTER COUNTY—		
Carter Oil, Bridenthal 3, sw sw sw 3-1s-3w	55	2793
Carter County Oil, Byrd 1, se sw sw 4-2s-2w	12	1140
Simpson-Fell, Akers 1, ne se ne 5-2s-2w (pb 1513)	5	1707
Skelly, Westheimer 3, se se nw 8-2s-2w (pb 1312)	*	1998
Gulf Oil Corp., Garrett 8, se nw sw 27-2s-3w	lcn.	abd.
Shell Pet. Wirt Franklin 65, nw se nw ne 8-4s-3w	31	1028
COMANCHE COUNTY—		
Thweatt, Fahy 1, se se sw sw 21-2n-10w	*	710
Oscar Jones, Scheets 1-A, ne ne sw 26-3n-10w	lcn.	abd.
CREEK COUNTY—		
Abraham, Dickson 1, cwl nw nw 19-17n-10e	¶1	992
Edna Oil, Beaver 1, ne ne nw 19-17n-10e	¶1¼	2290
GARFIELD COUNTY—		
Herndon Drlg et al, Branson 1, sw sw se 23-24n-3w	*	5008
HUGHES COUNTY—		
Mid-Continent, Hampton 1, sw sw ne 1-9n-8e	570	1728
Sinclair Prairie, Oliphant 7, se nw se 1-9n-8e	570	1744
KAY COUNTY—		
Shell & Continental, Lawrence 2 se se se nw 5-28n-1w	180	2783
KIOWA COUNTY—		
Shaffer, Martin 1, sw sw sw 26-7n-17w	lcn.	abd.
W. C. Adams et al, Stone 2, ne se ne 34-7n-17w	*	1193
LINCOLN COUNTY—		
Stanolind et al, Craig 4, nw nw nw 12-14n-3e	126	4245
The Texas Co., Hollister 1, se ne ne 6-14n-3e (pb 4405)	*	5050
OKLAHOMA COUNTY—		
British-American, Piersol 1, se se se 22-12n-3w (otd 6362)	¶90-15,036	6511
British-American, Pierson 4, ne se se 22-12n-3w	¶28½-6797	6518
Russel 1, se se ne se 22-12n-3w	¶23-23,706	6456
Barnsdall et al, Bracht 3, se ne sw sw 23-12n-3w	¶32-22,297	6459
Sinclair Prairie, Stites 1, se se sw 8-13n-3w	¶10-75	6520
OSAGE COUNTY—		
Lewis Prod 3, se ne ne 20-24n-7e	84	2664
Sinclair Prairie & Peters 11, sw nw ne 24-24n-7e	20	740
Coralena Oil, 1-A, ne ne sw se 6-24n-8e (pb 2555)	*	2561
Carter et al 6, nw se ne 34-26n-6e	¶1½-508	2924
Carter et al 6, nw ne se 34-26n-6e	¶¾-790	2885
Carter et al 7, ne sw se 34-26n-6e	¶¾-889	2870
PAYNE COUNTY—		
Deep Rock Oil, Ryan 2, nw sw sw 34-18n-5e (pb 3125)	¶5	3870
PITTSBURG COUNTY—		
Mid-Western O&G, Trekoll 4, nw sw nw 14-7n-18e (pb 2262)	¶4	2430
PONTOTOC COUNTY—		
Moore, Norris 2, ne nw ne 35-2n-6e	¶2-1614	4451
Marcum, Magnuson 1, sw se se 23-2n-7e (otd 1930)	*	4785
Continental, Holkum 1, nw nw se 27-2n-7e	¶2-4044	4141
Magnolia, Burris 4, se sw nw 27-2n-7e	¶2½-3266	4287
Burris "B" 1, sw se ne 28-2n-7e	¶2-3487	4305
Moore, Mack 3, nw sw se 28-2n-7e	¶1-2607	4307
Skelly, Park College 6, ne ne nw 28-2n-7e	¶3½-4327	4315
Clark & Cowden, Brown 3, ne nw se ne 12-4n-7e	*	1961
Boettcher, Starrett 3, sw sw ne 23-4n-7e	65	1725
Mary "F" Oil, White 2, se nw se 16-5n-8e	5	945
POTTAWATOMIE COUNTY—		
Magnolia, School Land '16' 2, nw nw nw 36-6n-4e	50	2976

Company, Well and Location	Init. Prod. Bbls.	Depth
SEMINOLE COUNTY—		
Rudco, Fleet 3, ne ne se 13-6n-7e	100	2832
Rudman, Bates 1-A, se se ne 13-6n-7e	120	2820
Wynona-Jarvis-Holmes, Horton 1, ne sw ne 18-7n-8e	*	4250
Magnolia, Reed 5, sw ne nw 34-8n-8e	*	4214
Carter Oil, Criswell 2, ce½ nw se 2-10n-6e	464	4167
Carter Oil et al, Pipkin 4, cw½ se sw 2-10n-6e	1104	4160
North 1, cw½ sw se 11-10n-6e	2592	4123
STEPHENS COUNTY—		
Skelly, Selby 29, ne ne se sw 26-1s-5w	*	942

*Failures; †Junked; ¶Million cu. ft. gas.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
The Texas Co., Schmidt 1, ne ne nw 36-19s-11w	1263	3300
Continental, Risse 3, ce½ ne se 36-19s-11w	1555	3274
Magnolia, Steckel 3, se nw ne 1-20s-11w (otd 3291)	378	3307
COWLEY COUNTY—		
Shawver et al, Wilson 1, ne se ne 11-30s-4e	*	2890
Shawver & Wilt, Baruth 1, sw nw ne 8-34s-3e (otd 1893)	125	3305
ELLIS COUNTY—		
Palmer & Storm King, Ruder 4, nw sw ne 17-15s-18w	801	3291
GREENWOOD COUNTY—		
Oko Oil, Shedel 15, sw ne se 15-23s-13e	50	1803
McPHERSON COUNTY—		
Continental et al, Broechner 1, cw½ e½ se 29-21s-1w	1124	3335
Ok-Tex et al, Moehlinger 1, se sw sw 21-21s-2w	*	3650
NORTON COUNTY—		
Lario & Elwell, Kennedy 1, sw sw nw 22-3s-23w	*	3692
RENO COUNTY—		
Olson & Shell, Rudical 4, cne sw 24-23s-4w	293	3372
Dickey & I.T.I.O., Baughman 6, se se ne 3-24s-4w	489	3361
Gulf Oil Corp., Myers 7, se sw nw 3-24s-4w	1031	3604
Derby Oil, Seedle 1, se ne sw 17-24s-4w	1000	3356
Derby Oil, Seedle 8, se ne sw 17-24s-4w	¶1-752	3370
Marathon Oil, Wm. Mueller Jr 1, sw sw ne 30-24s-4w	353	3403
Derby Oil, Schrock 5, sw sw sw 27-24s-5w	¶5-62	3494
Marathon Oil, Bontrager 1, ne ne ne 33-24s-5w (pb 3465)	107	3925
RICE COUNTY—		
Vernon O&G & Cusco Oil, Boldt 1, nw sw nw 10-19s-10w	*	3388
Hutchinson Oil, Wendell 4, se sw ne 32-19s-10w	2198	3310
Stanolind, Specht 3, se nw ne 6-20s-10w	1739	3311
Sinclair Prairie, Graham 3, nw sw se 16-20s-10w	138	3372
Skelly, Graham 3, ne se se 16-20s-10w	2551	3359
RUSSELL COUNTY—		
Central Pet, Rusch "B" 1, nw ne sw 19-12s-15w	706	2996
Charles Newbold, Krug 1, se sw se 4-15s-14w	*	3230
Skelly, Schwartzkopf 1, se se se 26-15s-15w	939	3173
SEDGWICK COUNTY—		
Johnson, Jansen 1, sw sw nw 11-28s-2e	*	3404
Lauck et al, Wolf 1, se sw ne 6-28s-1w	*	3679
SUMNER COUNTY—		
Vickers Pet, Markley 2, nw sw se 28-31s-1w	246	3674
C. B. Davis et al, Wenrich 1-A, ne ne nw sw 23-32s-2e	342	2179
Morgan et al, Veail 1, se sw ne 27-32s-2e	*	3415
WOODSON COUNTY—		
Connelly & Cooper, Smith-Jobe 10, cw½ ne nw 7-24s-14e	30	1736
Sheedy et al, Grand Lodge 1, ce½ nw sw 4-25s-14e	*	1542
Sheedy et al, Klick 3, nw se sw 20-25s-14e	125	1440

*Failures; †Junked; ¶Million cu. ft. gas.

Kansas Extensions

AND NEW LOCATIONS FEATURE ACTIVE WEEK

WEEKLY STAFF REPORT

Wichita.—An important extension of the Wakeeney pool in northern Trego County, and of the Bloomer pool in northwestern Barton County were the highlights of a week which probably is below the abnormally fast pace that Kansas operators have set for more than a year. New work, however, showed a material increase over the preceding week as scouts made 54 first reports in 16 counties. Rice County took a commanding lead with 14 first reports; Greenwood County had half that number; Ellis County had 6; Barton, Russell and Reno Counties, 4 each; Woodson, McPherson, Sedgwick and Sumner Counties, 2 each; and Edwards, Stafford, Rooks, Butler, Cowley and Harvey Counties, 1 each.

Completed work also was increased over the preceding week when 34 tests reached the final stage. Included in this number were 25 oil wells which added 18,397 barrels to the state's cumulative initial production, and 9 dry holes, all of which involved 101,756 feet of drilling.

McPherson County

Continental Oil Company's Boeckner 1, NW SE SE 29-21s-1w, which recently extended the Graber pool of southeastern McPherson County a half-mile to the east, pumped 1124 barrels in 24 hours after treating Hunton lime drilled to 3335 feet. It is the third largest well in the pool which was discovered in May, 1935, with the completion of Graber 1, NE NE NW 32-21s-1w. Production was obtained from Hunton lime at 3274 to 3298 feet, the total depth. Natural flow of 870 barrels was increased to 1294 barrels by acid treatment. The same operator's Hetzke 1, SW SW NE 29-21s-1w, which recently extended the pool a half-mile to the north, has been given an official rating of 1415 barrels on the pump.

Rice County

Another attempt to extend the Brandenstein pool of northwestern Rice County failed with the announcement of plugging to abandon at Vernon Oil & Gas Company and Cusco Oil Company's Boldt 1, NW SW NW 10-19s-10w, one miles west of the two-well pool. Top of the Arbuckle lime was encountered at 3345 feet and the hole carried to 3388 feet. The pool was discovered by Atlantic Oil Producing Company's Brandenstein 1, C SE SE 10-19s-10w, completed in Kansas City lime at 2936 to 3026 feet in November, 1933, when it yielded 1093 barrels initially.

Trego County

Continental Oil Company's Holcombe 1, C EL NW 26-11s-23w, approximately 1½ miles south of the discovery well in the Wakeeney pool of northern Trego County, topped Oswald lime at 3602 feet, had first oil at 3647 feet and at 3654 feet, the total depth, started filling up at the rate of 100 barrels per hour. The discovery well had Oswald lime at 3619 to 3627 feet, from which depth it yielded 126 barrels when completed in August, 1934. No outlet was available to the area until January, 1936. The same operator had announced location for No. 1, C WL NE 26-11s-23w, west offset to Holcombe 1.

Barton County

The new Bloomer area of northeastern Barton County was assuming a role of major importance with an extension and a new operation during the week. The Texas Company's Moran 1, SE SE NW 25-17s-11w, slightly over one mile north of the discovery well, penetrated Arbuckle (siciceous) lime from 3280 to 3285 feet, from which depth it filled 2800 feet the first 30 minutes, and at the end of the first hour the hole was standing full of oil. The Texas Company had announced location for Bloomer 1, NW NW NE 36-17s-11w, four locations north and one east of the discovery well, which was completed in February of this year, yielding 470 barrels on the pump after acid treatment in the lime at 3257 to 3281 feet.

Stafford County

Lario Oil & Gas Company and Atlantic Oil Producing Company's Andreass 1, NE NE NE 1-21s-13w, important wildcat test located six miles northeast of the town of Seward in northern Stafford County, topped Arbuckle (siliceous) lime at 3485 feet, recovered a saturated core to 3495 feet and started running eight-inch casing.

Reno County

Shell Petroleum Corporation had drilled the plugs and expected to complete Nunemaker 1, C SL NW 11-26s-9w, approximately one-fourth mile

northeast of the discovery well in the new Laredo (Langdon) pool of southwestern Reno County. This area gives promise of being one of the most important discoveries of 1935 in western Kansas. The three wells already completed have a daily potential of 15,000 barrels. The discovery well, Shell Petroleum Corporation's Reece 1, CW½ W½ SW 11-26s-9w, partially completed for 878 barrels from Viola lime at 4128 to 4156 feet in November, 1935, producing with the bailer in the hole. During the week the bailer was disposed of and after the acid treatment the well responded with a yield of over 11,000 barrels in 24 hours to make it the largest well in the western part of the state.

Ellsworth County

Southern Ellsworth County received attention late in the week when Davis et al's Edwards 1, SW SW SE 34-17s-8w, a wildcat test four miles southeast of the South Lorraine pool, topped Arbuckle (siliceous) lime at 3244 feet, drilled to 3247 feet and had 2800 feet of 41 gravity oil the first two hours. Carter Oil Company had staked location for No. 1, C SL SW 23-17s-9w, northeast of the pool and northwest of Edwards 1.

SULPHUR GAS WELL

In Moore County may be deepened for oil

Pampa, Texas.—An open flow yield of 176,320,000 cubic feet of dry sulphur contaminated gas production daily was recorded by Phillips Petroleum Company's Jones-Moore "66" 1, SWc NW SW Section 166, Block 3-T, T&NO Railway Survey, Moore County, from lime at 3270 feet, or 257 feet above sea level. This well established a new record for the county on gas yield, and may be deepened to try for oil production in lime near the 3380-foot level, as Shamrock Oil & Gas Company has an oil producer on lease adjoining to the west.

Shamrock Oil & Gas Company's Ryan Jones 1, about 1½ miles to the southeast and in Section 190, is a contender for gas production honors, having gauged 112,400,000 cubic feet daily from lime at 2835-3331 feet. It has an elevation of 3493 feet, and the gas production registered 390 pounds rock pressure. Production will be mudded off to deepen to the oil horizon.

C. S. Allender et al's J. B. A. Harvey 1, SWc E½ SW¼ Section 67, Block 13, H&GN Ry. Survey, an intermediate test for the original Osborne pool and the northwest extension in Wheeler County, produced water when tested at 2187 feet, and will plug back to complete as a gasser. It has an elevation of 2264 feet. Phillips Petroleum Company's G. W. Porter 1, projected Ordovician lime test about two miles northeast of production in the Shamrock oil and gas field, was drilling near the 2900-foot level late last week.

J. T. Todd and L. L. Hines, Oklahoma operators, have assembled a 2700-acre block, centering several miles northeast of Alanreed, Gray County, with plans calling for the drilling of a 4600-foot test.

Talco Failures

THREE WILDCATS MISS PALUXY PAY HORIZON

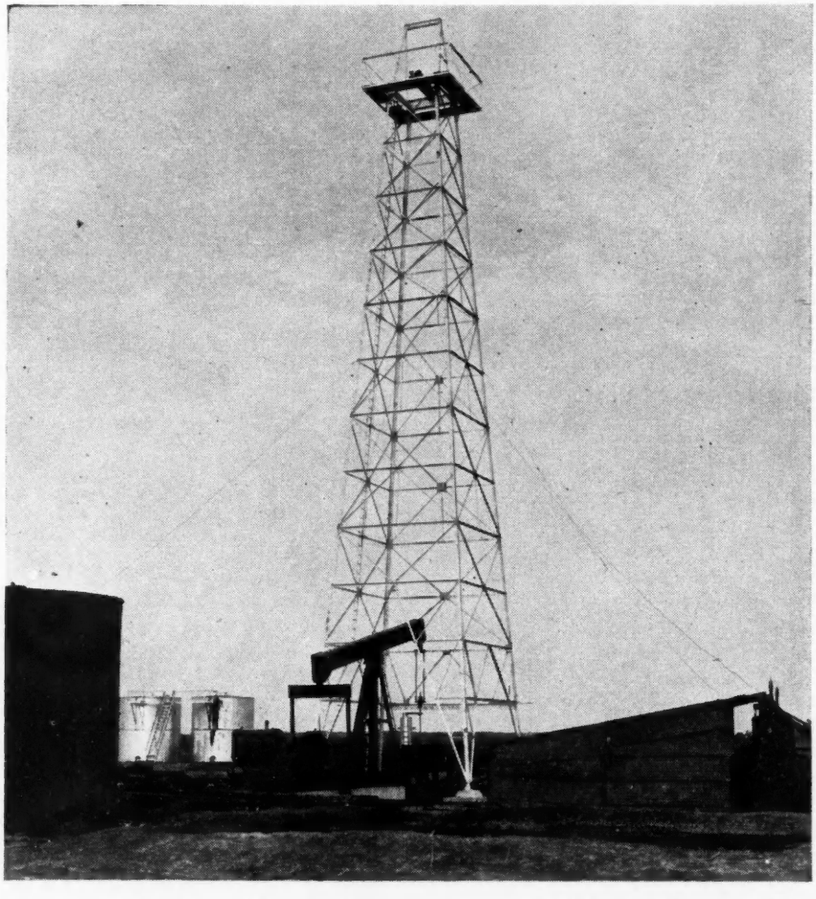
WEEKLY STAFF REPORT

Fort Worth.—The first three tests drilled in the Talco area, Titus County, since the completion of two oil producers, failed to intercept the Paluxy, or discovery sand, at the normal depth. Two of the tests appear to have been located too far south from the narrow faulted structure, while the other was spotted too far north from the fault plane.

No activity has been undertaken along the 2½-mile interval between the producing wells, which are situated on opposite sides of the town of Talco, although independents have staked 17 locations. Failure of the first group of tests to produce has forestalled the launching of an aggressive drilling program, and also caused a sharp drop in lease and royalty prices.

The probable producing area, projected by competent geologists, has not been impaired by the adverse developments, but information at hand indicates that production from the Paluxy will be restricted to a long and narrow strip adjacent to the south front of the Mexia fault plane. This condition prevails in fields producing from the Woodbine sand zone.

Jules Alford, Dallas, et al's J. E. Fry 1, I. P. Stern Survey, situated about 9000 feet south of the discovery producer, was drilling at 4275 feet, or approximately 120 feet lower structurally than the sub-sea depth of the



Pleasant Oil, Inc.'s C. M. Carr 1, discovery well at Talco, northwestern Titus County. (Picture courtesy Lufkin Foundry & Machine Company.)

two oil wells. Fry 1 encountered the Georgetown lime at 3350 feet with an elevation of 319 feet.

Operations have been halted on the probable failures in the Paluxy, or upper sand section of the Trinity. Humble Oil & Refining Company's Mary B. Grove 1, situated in north portion of 82.9-acre lease, Ben Jones Survey, and 8800 feet east of the discovery well, shut down at 4492 feet, or 4183 feet sub-sea, after failing to cut through to the upthrow side of the fault plane. A protection string of 8⅝-inch casing has been landed near the 2000-foot level, and the rig will be moved about 1200 feet south for a second test. The proposed new test will probably locate the course of the fault, which apparently shifts to the south in this area, thus enabling the company to forecast as to the chances for Grove 1 to reach the upthrow position in making the initial try for production in the Glen Rose zone, or lower Trinity.

Humble Oil & Refining Company's Myra Galt 1, NWc of a 10-acre lease, R. Winn Survey, A-622, situated 4300 feet southeast of the discovery well, was drilling below 2500 feet, according to late reports. Pecan chalk was logged at 1658-1785 feet, with an elevation of 346 feet. This test is believed located properly to pass from the downthrow to the upthrow side of the fault and reach the Paluxy at a high point of the structure.

C. M. Joiner and John T. O'Neal's O. C. Lilienstern 1, SEc of an 80-acre lease, Wm. Gann Survey, situated 22,000 feet southeast of the discovery well, recorded a low structural position in drilling to 4344 feet, or 4042 feet sub-sea, where operations have been halted for the time being. This test is too far removed from the faulted structure to have any bearing on the Talco area.

Late production gauge given Pleasant Oil, Incorporated's C. M. Carr 1, discovery well for the Talco area, credited a yield of 551 barrels of pipe line oil on a 24-hour pumping test from Paluxy sand at 4190-4208 feet. Humble Oil & Refining Company (was W. C. Windsor's) A. P. King-Hughes 1, eastern Franklin County, flowed 351 barrels of pipe line oil through a one-inch choke, with 85 pounds working pressure on tubing and 70 pounds closed-in pressure on casing. It is producing from sand at 4152-4197 feet.

Drilling was resumed the past week on C. F. Lytle et al's Thompson 1-T, Trinity sand test for the west flank of the Mexia field, after moving in a new string of drill pipe. This test has progressed to the 5600-foot level and will likely reach a decisive depth next week.

Pure Oil Company's W. H. Faulkner 1, proposed Trinity test for the Mount Enterprise structure, Rusk County, was drilling in hard lime at 2915 feet, with an elevation of 563 feet.

Fewer Rigs

DEFERRED ACTION ON PERMITS SLOWS WORK

Tyler, Texas.—Quota of new wells for the East Texas field remained at a high level the past week, but drilling activity has temporarily receded in volume. Current check on field work reveals about 120 active rigs, as compared to an average of 135 active operations for several weeks previous. This slump is largely due to the railroad commission having deferred action on a great number of permit applications that involve exceptions to well spacing rules.

Resumption of field work on the former basis will follow the release of the pending applications, as the majority of the operators propose to continue development until all possible locations are drilled. The minority group, holding the bulk of the producing acreage, prefer to restrict drilling to a reasonable well density, but are forced to keep pace with the aggressive operators in order to protect their respective properties from drainage.

The currrent list of completions includes 63 producers and two failures on edge leases. Thos. D. Humphrey's C. C. Crews 6-A, located on the east edge of 560-acre lease, L. Perkins Survey, Gregg County, cored Woodbine at 3629-3633 feet, carrying salt water, and was abandoned. Top of sand was found at 3327 feet sub-sea. This failure is on the west flank of the structure. Magnolia Petroleum Company's R. H. Still 1, NWc 45-acre lease, located on the east edge of the Kilgore area, failed to respond to nitro shot at 3608 feet, and was abandoned. A second test on this property is showing for a small pumper after drilling to lime at 3562 feet.

Independents were credited with 33 of the completions recorded the past week, including nine non-flowing producers.

Austin, Texas.—The McCarthy Oil Company has been given a permit by the Texas Railroad Commission to install a water flooding system on two leases in Wichita County.

The leases include 144 acres and are nearing the final stages of depletion.

This is the second order issued by the commission providing for water flooding leases in Texas. The Texas Company has been permitted to institute a similar program on some of its shallow leases in Brown County.

EAST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arkansas F. O. Co., G. Ferguson 14 (73.8-ac)	8500	3673
Atlantic, Pinkston 13-D (108-ac)	3500	3652
Ebony Oil Co., Deason 7 (25-ac)	3000	3690
Centex Oil Corp., Pace 3-B (22.23-ac)	1500	3760
J. E. Farrell & Co., Hammett 3 (100-ac)	500	3636
Humble, Sneed 13 (104.7-ac)	10,000	3699
Lide-Tayloe Oil Co., C. Young 8 (40-ac)	1200	3727
Londo Oil Co., Cunningham-Hamilton 2	2500	3810
Marathon, Moores 36 (200-ac)	1200	3708
T. W. Medlin et al, Mayfield 4	3000	3811
Nivla Oil Corp., Bradford 1-B (6-ac)	35	3615
Roosth & Genecov, Hammett 2 (21-ac)	200	3651
Sinclair Prairie, Kinney 69 (579.21-ac)	8400	3650
Spandsco O. & Roy. Co., Brett 10 (49-ac)	3500	3721
Stanolind, M. Schuyler 8-B (73.57-ac)	700	3798
Sun, J. D. Henson 24 (216½-ac)	2400	3651
T. Lanham 2 (100-ac)	1500	3853
Sutton & Hawkins, Moore 1 (8-ac)	400	3756
Vinson 4 (21.6-ac)	100	3710
Theron Oil Co. (was Rozel), Neal-Magnolia 2 (31-ac)	50	3662
KILGORE AREA—		
Alladin Pet. Co., Dansby 4 (40-ac)	240	3744
Arkansas F. O. Co., Hughey-Ross 35 (220-ac)	6500	3540
Champlin & Bass, Roberson 6 (69.81-ac)	320	3596
Jules Constantin et al, Utzman 2 (18½-ac)	240	3518
Gulf, Still 18 (188.38-ac)	750	3592
Humble, Laird 72-B (568.53-ac)	3500	3629
Laird 79-B (568.53-ac)	720	3607
Peterson 37 (222.1-ac)	8500	3625
Thos. D. Humphrey et al, C. C. Crews 6-A (560-ac)	*	3633
Hurtle Oil Co., Sexton 11 (100-ac)	800	3643
Sexton 14 (100-ac)	1000	3606
Kimberlin & Howse, King 2-B (10-ac)	7000	3440
Reynolds 2 (10-ac)	7200	3443
Frank King et al, Florey 3 (20-ac)	600	3662
M. W. McVey et al, Richards 4 (143.78-ac)	300	3478
Magnolia, Still 1 (45-ac)	*	3608
Rajo Oil Corp., McCormic 9 (109.52-ac)	700	3749
McCormic 10 (109.52-ac)	650	3752
Shell, Elder 36 (195.05-ac)	8500	3557
Sinclair Prairie, Andrews 29 (200-ac)	6500	3490
Texas Co., Walker 13 (213-ac)	750	3582
Tide Water, Bean 13 (85.6-ac)	4500	3605
LONGVIEW AREA—		
Arkansas F. O. Co., Lee 8-A (52.1-ac)	8000	3569
Atlantic, Duncan 22 (154.7-ac)	10,000	3682
Duncan 23 (154.7-ac)	10,000	3680
Conservative Oil Co., Mackey-Humble 13 (147.1-ac)	750	3702
Bert Fields et al, Walker 5 (140-ac)	7000	3650
Gulf, Anderson 5 (15.7-ac)	7200	3494
Humble, Armstrong 24 (155.7-ac)	4800	3592
Mattox 9 (61.6-ac)	1500	3688
Jones & Shelburne, Victory 4 (35.6-ac)	500	3702
S. H. Killingsworth-Bert Fields, Negro School 2 (2.08-ac)	6000	3590
A. O. Phillips et al, Victory 4 (35.6-ac)	4600	3615
B. H. Rogers et al, Evers 4 (44.11-ac)	60	3837
Simms Oil Co.-Leon Russ, Flewellen 18 (200-ac)	4000	3698
D. J. Simmons et al, Jackson-Red Bird 3 (6-ac)	4200	3571
Southland Drl. Co.-United E&W Oil Co., O'Byrne 19 (304-ac)	3000	3708
Stanolind, Castleberry 6 (77.44-ac)	1500	3604
Fenton 13, Acct. A (77.64-ac)	9000	3624
Jones 5-A (30.38-ac)	9600	3675
Stanolind-Falcon Co., Williams 2-A (17.24-ac)	4200	3766
The Texas Co., M. Wood 12 (90-ac)	4000	3604
Tide Water, Castleberry 17 (202-ac)	5000	3610
Sheppard 17 (114.36-ac)	7000	3598
United E&W Oil Co., Walker 1-A (62-ac)	4000	3593
ANDERSON COUNTY (Cayuga Field)—		
Tide Water-Seaboard, Lutterloh 2 (601.57-ac)	2500	4048
FREESTONE COUNTY (Cayuga Field)—		
Tide Water-Seaboard, J. L. Johnston 1 (894½-ac)	2000	5308
VAN ZANDT COUNTY (Van Field)—		
Pure Oil Co., M. L. Gilbert 4 (103.-ac)	10	2956

*Failures; †Junked; ¶Million cu. ft. gas.

Permian Test

YOAKUM COUNTY WILDCAT PRODUCES SULPHUR OIL

WEEKLY STAFF REPORT

Midland, Texas.—Yoakum County's first test to penetrate the Permian lime horizon, the regular oil producing horizon for the Permian Basin section of West Texas, was recorded as a commercial well on April 6 after responding to a nitro shot with an initial flow of 234 barrels of 32.8 gravity sulphur oil. This important north extension for the basin was drilled by Honolulu Oil Corporation and Cascade Petroleum Company's L. P. Bennett 1, C NE NE Section 678, Block D, J. H. Gibson Survey, and has been in process of completion since late in February, having entered the first oil zone at 5096 feet last September. It was idle for about five months after showing for a producer, pending settlement of title difficulties.

Three separate oil zones were logged by Bennett 1 in deepening to sulphur water in lime at 5278 feet, corrected depth. The hole was plugged back to 5260 feet and shot with 370 quarts of nitro at 5078-5260 feet. Flow of oil subsided on the second day, but the yield amounted to 240 barrels on part time swabbing. Owners plan to run tubing with packer, then acidize if the well fails to flow. No plans have been made for the drilling of additional tests in the area, although one or more locations will likely be announced shortly. Since the well is isolated from pipe line and rail transportation, the market for the oil will be limited to boiler fuel sales to other wildcats starting up on blocks to the north and northeast.

Goldsmith Producer

Goldsmith field, Ector County scored a prolific natural producer through the completion of Phillips Petroleum Company and Pure Oil Company's Clyde Cowden 4, near center of south line of NW¼ Section 23, Block 44, T&P Ry. Survey, T-1-S, from lime at 4092-4135 feet. On preliminary gauge the well flowed 174 barrels through casing the first hour and 143 barrels the second hour, with gas volume estimated at 15 million cubic feet daily. In the Foster pool, Ector County, Barnsdall Oil Company's H. C. Foster 2, C SW SW Section 18, Block 42, T-2-S, was cleaning out and swabbing about 125 barrels oil daily after a heavy nitro shot in broken lime at 4085-4225 feet. Sulphur water was encountered at 4234-37 feet, with an elevation of 2936 feet. This well is an east offset to the discovery well, and is slightly lower on structure.

Traces of oil logged above the lime and near the 2100-foot level by Fleetborn Oil Corporation and Mid-Continent Petroleum Corporation's F. C. Dodson 1, SEc Section 13, Block 34, T&P Ry. Survey, T-3-S, Glasscock County, caused attention to be focused upon this wildcat the past week. Late reports indicated drilling in progress at 2350 feet, logging anhydrite and lime formation. The salt series is reported to have been missed by this test, which has an elevation of 2714 feet. The owners acquired lease on a 7300-acre block to make the test. An unusual geological feature has been known to exist in the area for years. In anticipation of development, Dodson, who is a San Angelo consulting geologist, purchased land in fee. Shell Petroleum Corporation is reported to have expended approximately $20,000 for lease protection. Dodson 1 is about 7 miles southeast of the World pool.

A. D. Morton, discoverer of first oil production in northern Moore County, Texas Panhandle, is reported to have assembled a wildcat block in northwestern Mitchell County and southwestern Scurry County that requires the driling of a test at an early date. W. B. Hogan et al have acquired leases on about 4500 acres in southeastern Sterling County, and are negotiating for the drilling of an Ordovician lime test in Section 110, Block 6, H&TC Ry. Survey.

TEXAS PANHANDLE Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
J. R. McGill et al, E. Cooper 3-B	561	3121
GRAY COUNTY—		
Empire G&F Co., A. J. Culler 11	691	3255
Kewanee O&G Co., Morse-Adams 5-A	320	2545
Southern Pet. Exploration Co., J. G. Noel 6	431	3223
HUTCHINSON COUNTY—		
Harvester Oil Corp., W. B. Haile 3	825	3070
Paloma O&G Co. (was J. R. Phillips), T. Lewis 2	1156	3088
U-Tex Oil Co., Ware 3-B	567	3165
MOORE COUNTY—		
Texoma Nat'l Gas Co., J. T. Sneed 2-P	¶32	3243
Magnolia, Mary Miller 1	¶2½	3583
WHEELER COUNTY—		
Ben G. Barnett et al, Stewart 1	¶12.6-143	2136
B. S. & S. Oil Co., Gregg 1	¶6.8-139	2127
Palmer et al, S. T. Grimsley 1	¶18.3	1710
Piney O&G Co., G. H. Copeland 1	¶7¼	2308
Smith Bros. Ref. Co.-Hanlon Buchanan, Inc., Johnson 4	¶11.7-3216	2535
Williams 3	¶4.2-942	2555

*Failures; †Junked; ¶Million cu. ft. gas.

400 Barrels Hour

WINKLER SEMI-WILDCAT IS NORTH OF HENDRICK

Midland, Texas.—Rated flow of pipe line oil exceeding 400 barrels per hour was developed by R. H. Henderson, Midland, and others' J. B. Walton-Humble 1-A, Winkler County semi-wildcat, from porous dolomite lime at 3034-3049 feet early last week. This prolific producer, located in NEc Section 9, Block 26, P. S.-L. Survey, about 2½ miles north of the Hendrick field, was permitted to flow open for 45 minutes then shut in for tankage and separator. Later gauge credited the well with flowing 60 barrels of oil hourly through ¾-inch choke on tubing, with gas volume estimated at 3,000,000 cubic feet daily. Production was further restricted later in the week to conform with proration restrictions and to safeguard against premature appearance of water.

Henderson et al's spectacular completion probably affords an extension to the Hendrick field, which centers upon a reef type of structure, as there are no intermediate dry holes and the producing zones are identical. Opinion prevails that the new well rests squarely on top of a narrow "finger" extending north from the old Hendrick field and that worthwhile production can be developed along the strike. E. M. Wahlenmaier et al's Fred Leck 1, NEc S½ SW Section 3, or about a half-mile northeast of the new producer, was completed in October, 1933, as a 30-barrel producer after nitro shot at 2919-3009 feet, having plugged back from sulphur water at 3133 feet. The latter topped the lime at 2750 feet, or 112 feet above sea level, and first oil saturation at minus 58 feet. Walton 1-A logged first lime marker at 2658 feet, or 215 feet above sea level, and is bottomed at 176 feet sub-sea. Gulf Oil Corporation's Daugherty 1-B, SWc NW Section 22, situated on north end of Hendrick field, was completed in June, 1929, with an initial flow of 2268 barrels of oil and 1020 barrels water from lime at 2745-2750 feet, with an elevation of 2854 feet. It was deepened to 2882 feet, or 281 sub-sea, and flowed 1268 barrels per hour, including 60 percent water, or 12,173 barrels net oil daily.

Henderson et als J. B. Walton-Humble

1-B, SEc SW Section 10, or one mile south and a half-mile east of their big producer, is situated on the east flank of the "finger" extending north from the Hendrick field, and occupies a lower structural position. Bailing test from saturated lime at 3033-3044 feet revealed the well capable of about 15 barrels oil daily. It was shot with 340 quarts of nitro at 2811-3044 feet, resulting in collapsed casing. Walton 1-B logged top of lime at 2810 feet, or 58 feet above sea level, and is bottomed at 176 feet sub-sea. Humble Oil & Refining Company assigned lease on Sections 9 and 10 early in February, retaining mineral rights below 4000 feet and an over-riding royalty ranging from one-thirty-second to one-sixteenth. Lease contract on the two sections calls for production by April 15.

In the Sayre field, situated 1¾ miles due east of the dolomite lime operations of Henderson et al, Sayre Oil Company's J. F. Howe 8-A responded to nitro shot in sandy-lime pay at 2784-2975 feet with a flow of 1938 barrels of oil and 9,000,000 feet of gas daily. This area offers the most attractive and consistant production of the fields undergoing development in Winkler County. Recent extensions to the north and south point to its eventual linking with the Scarborough and Brown-Altman-Kermit areas, all yielding high gravity oil from sandy-lime zone that lies to the east and parallel with the Hendrick reef type structure.

Sun Oil Company's Keystone 1, situated about midway between the Scarborough and Keystone fields, has progressed to the 4004-foot level without showing oil or gas. It occupies a low structural position, having logged top of lime at 2533 feet, or plus 436 feet, and will likely be abandoned. Magnolia Petroleum Company's Walton-State 1, intermediate wildcat project for the Sayre-Keystone areas, encountered sulphur water at 3689-3695 feet. The hole has been plugged back to 3645 feet to use acid in the lime. Small volume of gas was developed near the 3200-foot level after two nitro shots in sandy-lime formation, and the hole may be plugged back to complete as a gasser after using acid.

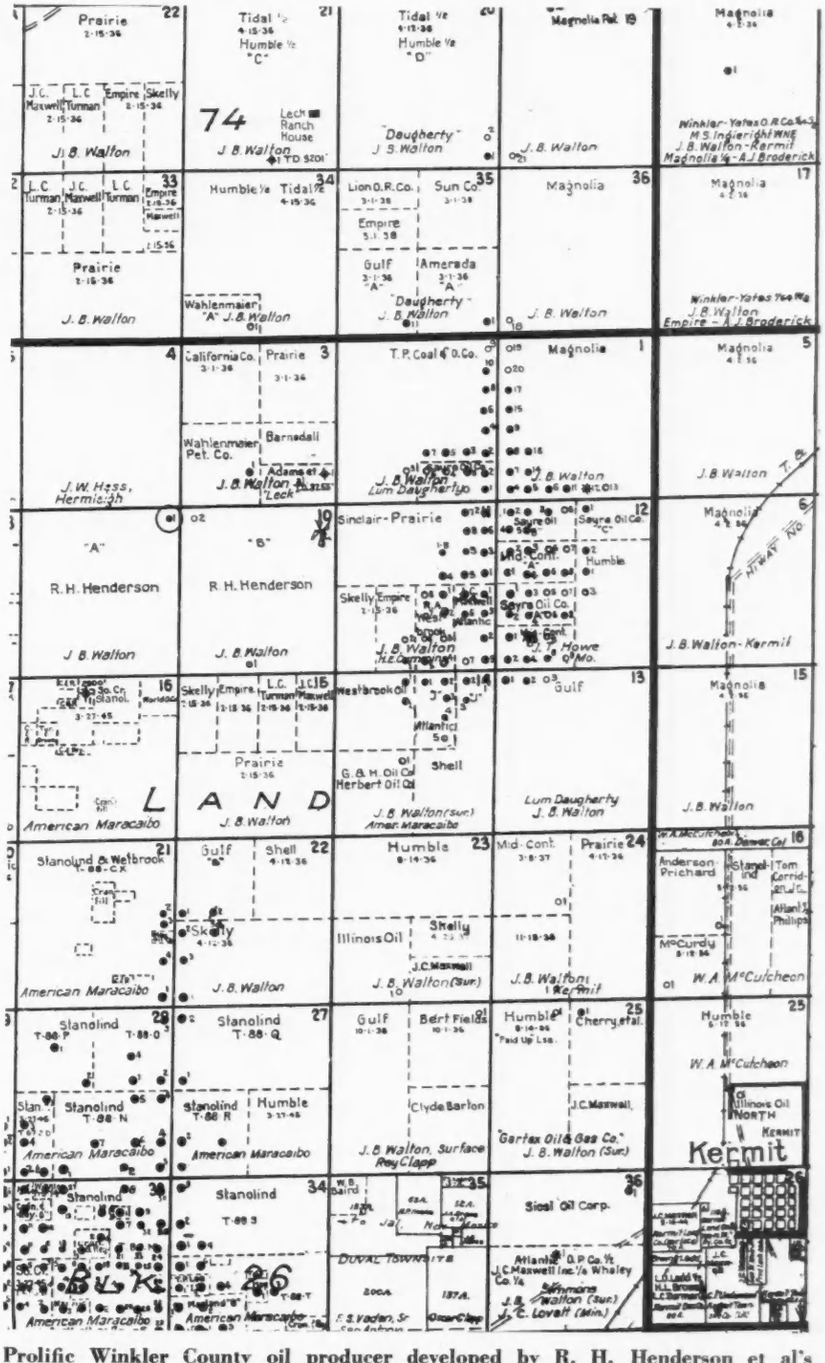
WEST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Fuhrman Field)—		
Furhman Pet. Corp., W. H. Boner 3-B	601	4504
BREWSTER COUNTY—		
C. M. Joiner Leasing Corp., W. J. McEntire 1	*	2150
G. H. Storey et al, J. P. Wilson 1..	*	1875
CRANE COUNTY (Gulf-McElroy Field)—		
Gulf, J. T. McElroy 130	584	2943
ECTOR COUNTY (North Cowden Field)—		
Stanolind, J. M. Cowden 28	933	4312
EL PASO COUNTY—		
A. M. Blume et al, F. W. Cook 1...	*	560
CROCKETT COUNTY—		
California Co., J. M. Shannon 5, lse 3	307	2535
HOWARD COUNTY—		
Sinclair Prairie, Dodge 32	525	2836
W. E. Prod. Co., Scrivner-Pure 1-D..	†	2431
IRION COUNTY—		
Lowe, Delaney & Carter, Nntt 8..	*	1612
JONES COUNTY—		
Thos. D. Humphrey, H. Dorsey 6....	116	2069
Samedan Oil Corp., M. M. Newton 3	*	2175
PECOS COUNTY (Torborg Field)—		
Cardinal Oil Co., Tippett-Kirby 37E.	108	440
PECOS COUNTY (Yates Field)—		
Cardinal Oil Co., Smith-Cornell 5-A.	51	521
E. J. & W. L. McCurdy, Smith-Shell 2-B	95	957
SCURRY COUNTY—		
Coffield & Guthrie, Inc., W. A. Wade 1	30	3168
UPTON COUNTY (McCamey Field)—		
O. F. M. Oil Co., King Ranch 1....	310	2161
G. R. Thomas & Burk, J. W. Robbins 2	659	2176
WARD COUNTY—		
Sinclair Prairie, G. P. Hill 2.....	702	2496
Wahlenmaier Pet. Corp., Potts-Humble 2	326	2390
WINKLER COUNTY (Gulf-O'Brien Field)—		
Harry Adams, Hitchcock & Hargraves, Sealy-Conoco 1	422	3131
WINKLER COUNTY (Sayre Field)—		
Sayre Oil Co., Dougherty 5.....	700	2980
J. F. Howe 8-A	¶9 & 1938	2980

*Failures; †Junked; ¶Million cu. ft. gas.

ORDOVICIAN TEST
6000-foot job halted by stuck drill pipe

Wichita Falls, Texas.—Formation dip recorded by Olson Drilling Company et al's Southwestern Life 1, Grayson County wildcat seeking production in the Ordovician series, has flattened since entering the Viola shale section at 5096 feet. Cores taken at the 4400-foot level indicated that the formation dipped 42 degrees. A check made of a core taken in black shale at 5450-5457



Prolific Winkler County oil producer developed by R. H. Henderson et al's Walton 1-A, indicated on above map by circle, is situated 1¾ miles west of the Sayre field and on a direct strike due north by 2½ miles from the Hendrick field. (Map courtesy Zingery Oil Map Company, Fort Worth.)

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feet showed a slant of only 10 degrees. Cavings were retarding progress the past week, and late reports indicated that drill pipe was stuck in shale at 5600 feet.

Search for Canyon lime production in Archer County has been extended further to the southwest of the Chalk Hill field through The Texas Company's J. H. Turbeville 1-I, which is drilling below 1530 feet. The company contracted to make a 2800-foot test in acquiring lease on 520 acres, centering upon Section 169, J. W. Cain Survey, A-69. Location is 2800 feet from south and 330 feet from west lines of E½ Section 169.

Alma Oil Company's T. B. Yarbrough 1, northeastern Cottle County wildcat, was drilling at 5250 feet, according to late reports. It is seeking production in the Canyon zone, due near the 5600-5700 foot level.

NORTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Consolidated Oil Co., Portwood 1-AA, sec. 1579	*	1420
Golding & Cochran, Stinnett 1, blk 19	*	750
Stinnett 2, blk 19	30	724
J. C. Hamer et al, P. L. Andrews-Archer Co. 1	*	1001
Luther Hedrick et al, M. B. Ray 1, blk 3	*	1554
Regal Oil Co., McCrory 2, blk 14	150	1614
CLAY COUNTY—		
Texas Co., Saner 1, lot 3	175	1090
COOKE COUNTY—		
T. P. Frost et al, Rohmer 2, blk 16	35	832
H. E. Hoover et al, G. C. Cartwright 1	*	1916
Kingery Bros., S. R. Meadors 1	*	1678
Mudge Oil Co., Johnson 11	55	1121
Raye Oil Corp., A. Reiter 1	*	986
JACK COUNTY—		
B. D. Compton et al, Chas. Henderson 1, blk 2	*	385
E. B. Sewell et al, D. R. Sewell 2, blk 1	8	302
D. R. Sewell 3, blk 1	6	294
D. R. Sewell 4, blk 1	10	297
MONTAGUE COUNTY—		
Pure Oil Co., Maddox 8-A	25	881
THROCKMORTON COUNTY—		
A. B. Bissey et al, D. M. McKeichan 1	*	712
Pet. Producers Co., Portwood 1	*	1475
Alex M. Snyder et al, W. J. Timmons 1, sec 793	*	1165
WICHITA COUNTY—		
Geo. W. Cooper et al, Waggoner Bros. 36, lot 13	12	1315
F. P. Cullum et al, S. B. Burnett 1-A, sec 4	*	1940
The Texas Co., W. B. Honaker 72, sec 3	2	1067
WILBARGER COUNTY—		
Bason Drlg. Co., Waggoner Est. 1-B, sec 7	*	1925
Deep Oil Dev. Co., Waggoner Est. 3, sec 40	25	1902
YOUNG COUNTY—		
Paul Atchley et al, Benson 1, sec 1392	350	895
L. T. Burns et al, Benson 1, sec 1478	*	956
Duncan et al, Benson 4, sec 1391	40	908
Benson 5, sec 1391	10	914
W. F. Hamilton et al, Jeffery 10, sec 53	50	831
Honea & West, Green 2, sec 1491	*	950
David S. Johnson et al, Hamilton 1, sec 1480	*	1002
Kriss & Alexander, Belknap 1, sec 23	5	660
Kriss & Junker, F. G. Green-Keith 1, sec 268	*	777
Pitzer & West, McCluskey 1, sec 1104	275	2751
Solo Oil Co., O. B. Stowe 5, sec 2	40	1060
Underwood Drlg. Co.-Campbell, Campbell 13-A, sec 1376	240	885
Campbell 14-A, sec 1376	135	884
R. J. Watson et al, Bertie Ward 1, sec 274	*	676

*Failures; †Junked; ¶Million cu. ft. gas.

Saxet Frio Produces

HEAVY DRILLING EXPECTED ALONG WEST SIDE OF FIELD

WEEKLY STAFF REPORT

Corpus Christi. — Establishment of the first crude oil production in the Frio series in the Saxet field, Nueces County, headed another eventful week of activity in the Corpus Christi district. Several key wells, giving promise of opening new production, were disappointing and may cool as many hot plays.

A. F. Holliday's J. Griffith 1, in the southwest corner of the tract, George Frank survey, west side of the Saxet field, gauged 256 barrels of 39.9 gravity pipe line oil in 12 hours through 5/32-inch choke, the production coming through perforations at 5818-28 feet. The well originally was completed last July at 5598-5602 feet, where it flowed 25 million cubic feet of gas and made an estimated 35 barrels of 58.9 gravity distillate per day through ⅛-inch choke under an equalized pressure of 1975 pounds. That completion was the opener of a new sand for the field. The deepening last week, however, was to 5844 feet, having solid sandy body from 5816 feet. A 5-inch liner was set to the total depth and perforated at 5818-28 feet.

Establishment of this oil horizon indicates a rather heavy drilling campaign for at least the west side of the field. Little work has been done to this depth, hence the real importance of the discovery may not be definitely outlined until considerable work is done. The acreage is fairly well broken among both fee owners and lease holders.

The new producer is about 3500 feet south of the same operator's F. J. Smith 2-A, completed last year at 5785-92 feet, where it showed about 20 barrels of gasoline along with a heavy volume of gas through 3/16-inch choke, showing equalized pressure of 2275 pounds. It is not considered likely that these are the same sands although they are at almost identical depths.

Of particular interest is the fact that the oil is 39.9 gravity, as compared with the majority of the crude ranging around 25 gravity from other sands in the district. This high gravity crude finds a ready demand in this sector, so its drilling should be of considerable attraction.

Texas Royalty Corporation extended the 4400-foot sand of the Saxet field 4000 feet to the east when it completed J. L. Scoggins 2 as a producer in sand at 4409-13½ feet. The well is flowing estimated 10 barrels per hour through 9/64-inch choke, but not fully cleaned. Pressures are 250 pounds on tubing and 550 pounds on casing.

Saxet Heights Active

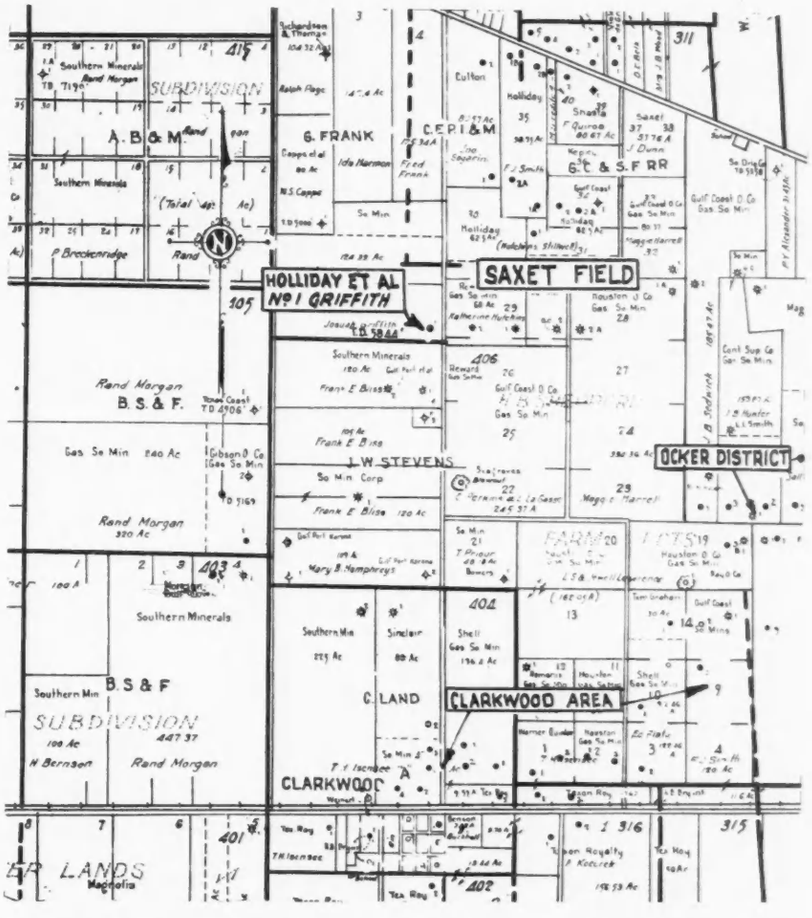
Saxet Heights (Corpus Christi) field, also Nueces County, continues its rapid drilling campaign on small tracts. One obstacle, however, is being encountered through the expansion of production into the residential sector of Corpus Christi. Small tracts in the residential sector near the Country Club are restricted against anything but residences. Litigation is being threatened to prevent the encroachment of drilling operations.

J. K. Culton and Republic Natural Gas Company's Baldwin et al 1-C, nearly one mile south of the field, has been abandoned at 7020 feet. The well showed salt water in the regular sand and picked up another sand at 5191½ feet which showed both oil and salt water. In the main field, Tom Graham and Republic Natural Gas Company drilled to 5254 feet in Whelan 1, but plugged it back and sidetracked. It cored the gas sand at 4030 feet and is going ahead into the horizon. J. P. Nash's Hatch 1, also in the field, topped the deeper sand at 5173 feet, but developed salt water at 5173-86 feet. It drilled to 5200 feet and was abandoned.

King Ranch Extended

A one mile southwest extension to the 4000-foot sand in the King Ranch field, Nueces County, was assured when LaJita Oil Corporation's Richard King 2 showed 475 pounds gas pressure in 15 minutes through ¼-inch choke on drill stem test at 4028-35 feet. It is coring ahead at 4070 feet. More than a mile farther southwest, but in Jim Wells County, Texon Royalty Company and Lucey Petroleum Corporation's Coopwood and Rolsten is coring ahead at 5434 feet, having passed through a gas sand at 5389-98 feet. It had several other gas showings at shallower depths.

G. M. Richardson's J. E. Garrett 1, in the Collins grant, 15 miles north of Alice in Jim Wells County, had its derrick collapse at 5800 feet, the driller being



Showing location of late strike in the Saxet field. (Map courtesy Porter Regenold, Corpus Christi, Texas.)

killed in the accident. This was the second death in three days on this rig.

Just east of the town of San Diego, Jim Wells County, Houston Oil Company's Hawkins et al 2, had gas sand at 6256-58, shale with odor at 6259-69 feet, sand and shale with oil odor at 6282-97 feet, and sand with oil odor at 6297-6301 feet. A drill stem test was attempted, but the pipe collapsed. It is now involved with a fishing job.

Continental Oil Company continues to test its American National Realty Company 2-A in the Seadrift area of Calhoun County. The well plugged to 7950 feet, set packer and retainer at 7698 feet, and failed to obtain a shut off. A second plug was set and the hole is tight with no gas showing. It will perforate at 6925-6970 feet for further tests.

Humble Oil & Refining Company and Plymouth Oil Company have commenced their third test on a geophysical prospect near Green Lake in Calhoun County. The new well is Pat H. Welder 2, located 3336 feet northeast of Welder 1, which showed considerable oil on drill stem test at 5505-20 feet.

Shell Petroleum Corporation has reentered the Mauritz field of Jackson County, where it drilled one producing well in the Frio sand below 5500 feet. The new well is C. F. Combs 2, located 1398 feet from the north and west lines of the discovery tract and just southeast of the first producer.

Tomoconnor Outpost Coring

Quintana Petroleum Corporation was coring for the 5800-foot sand in Fannie Heard 1, located one mile north of production in the Tomoconnor field of Refugio County. The company has carried on a rather steady drilling campaign in the main field, having completed 33 producers out of as many starts. In the Greta-Fox area, United Production Corporation is completing two wells. W. J. Fox 17-A is waiting on cement after setting 5-inch casing at 6248 feet. The well made a drill stem test at 6247-59 feet, where it showed 300 pounds pressure and 10 feet of gasoline in 10 minutes. Lambert 23 is drilling plugs after setting casing at 5832 feet, 20 feet above the bottom of the hole.

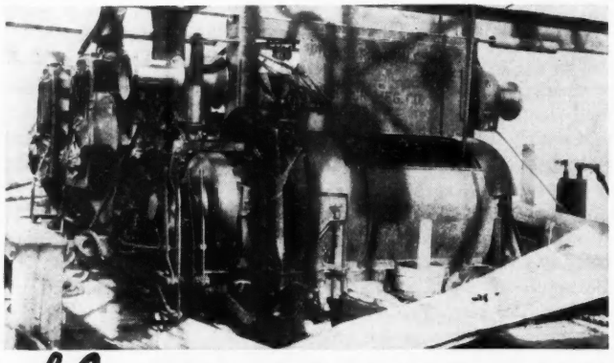
Benedum and Trees' E. H. Welder 2, wildcat 3½ miles northeast of Sinton in San Patricio County, is coring ahead at 5717 feet in hard sand cap. The well showed considerable oil when completion was attempted at 5710 feet, casing set at 5694 feet. However, it failed to develop enough pressure to flow. It is expected to open another Frio sand field for San Patricio County.

Humble Oil & Refining Company's Godwin 1, Taft district, made 85 percent salt water and 15 percent oil on production test from perforations at 4000-6 feet. It has plugged back and sidetracked. At last reports, the well was drilling at 3645 feet in the sidetracked hole. Shell Petroleum Corporation is coring for the 4000-foot sand in Pullin 1, only other active well in the field.

In Aransas County, Buckingham Oil Company's McCampbell 1, near Aransas Pass, has drilled to its contract depth of 7501 feet, but will back to 6500 feet for a series of tests below that level.

Austin, Texas.—A hearing set for April 14 by the Texas Railroad Commission to consider Bradenhead allowables in the Panhandle has been postponed until May 11.

An application was filed by Shamrock Oil & Gas Company protesting the system which is now used to fix allowables for these wells. The hearing will be held at Amarillo.



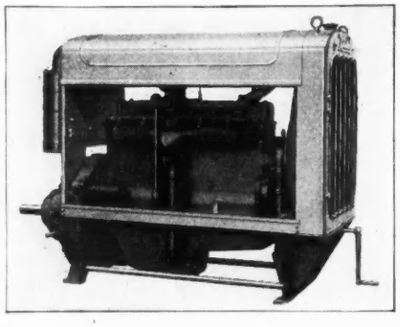
Portable GAS ENGINE RIG

Drills Shallow Wells with Low Fuel Cost

For drilling shallow tests in the Cushing, Okla., gas field, drilling contractor John Nunnelee is using a portable rig powered by two 6-cyl., 5 x 5½, gas burning DHKU Waukesha Engines. Engines operate independently . . . one for driving mud pump; other for drilling. Both may be connected to furnish power to draw works and still operate pump.

One job, bottomed at 3,090 ft., took 22 days . . . and total fuel cost was $150.84 . . . for prime movers, rig floor stoves and a small engine driving lighting generator . . . less than $7 a day, or about 5 cents per foot of hole.

The engines used by Mr. Nunnelee . . . Waukesha High-Duty Sixes . . . are built to meet the demand for a modern portable power unit in the 80-125 hp. range that will stand up under severe continuous duty in the oil fields. Their design embodies such advanced features as removable wet sleeve cylinders, built-in governor, seven main bearings, filtered pressure oiling, down draft carburetion, improved manifolding, overhead valves. ***Waukesha Motor Company, Waukesha, Wisconsin.***



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WAUKESHA ENGINES

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Illinois, I. Hall 11-B, T. J. Butler sur (Dirks)	450	3891
Texas Co., S. E. Young 18, G. Young sur (Dirks)	475	3922
CALDWELL COUNTY—		
Joe Graham et al, Martindale 1, 330 ft out of nw corner 253-ac tr, S. Morrison sur	†	520
DUVAL COUNTY—		
Atlantic, Welder 3-D, sec 113 (Seven Sisters)	500	2509
Bridwell Oil Co., Bishop 15, sec 76 (Loma Novia)	900	2616
Hubbard 3-C, sec 75 (Loma Novia)	350	2603
Hubbard 13-C, sec 75 (Loma Novia)	532	2572
Central Producers, Luptak 4, sec 41 (Gov't Wells)	¶20	2299
Duval Oil, Bishop 16, sec 59 (Loma Novia)	350	2538
Bishop 17, sec 59 (Loma Novia)	500	2551
Bishop 18, sec 59 (Loma Novia)	500	2547
Ruiz 2, sec 119 (Hoffman)	600	2882
Gravis et al, Flodin 3, sec 78 (Loma Novia)	150	2548
Highland Oil, C. W. Hahl 7-D, sec 63 (Loma Novia)	¶5	2567
Hubbard 15, sec 72 (Loma Novia)	240	2728

Company, Well and Location	Init. Prod. Bbls.	Depth
Humble, A. H. Badgley 2, sec 307 (Seven Sisters)	650	2538
M. C. Hubbard 9-A, sec 84 (Loma Novia)	250	2834
M. C. Hubbard 36-B, sec 72 (Loma Novia)	650	2710
R. Serna Jr 9-A, sec 384 (Seven Sisters)	450	2470
R. Serna Jr 6-B, sec 384 (Seven Sisters)	350	2503
R. Serna Jr 13-B, sec 384 (Seven Sisters)	550	2508
T. D. Smith 7, sec 382 (Seven Sisters)	650	2472
J. F. Welder 7-C, sec 75 (Loma Novia)	125	2710
Kaffie Lumber Co., M. H. Davidson 1, sec 114 (Loma Novia)	75	2561
Magnolia, C. W. Hahl 24, sec 67 (Loma Novia)	250	2719
C. W. Hahl 27, sec 67 (Loma Novia)	192	2676
Montour Prod Co., M. C. Hubbard 8, sec 75 (Loma Novia)	80	2634
Rosan Oil Co., M. C. Hubbard 12, sec 84 (Loma Novia)	1000	2803
Santa Clara Oil Co., Welder 1-B, sec 383 (Seven Sisters)	1000	2502
Welder 10-C, sec 381 (Seven Sisters)	350	2401
Shell, M. C. Hubbard 21, sec 77 (Loma Novia)	350	2747
J. F. Welder 5-A, sec 385 (Seven Sisters)	350	2495
Welder 2-B, sec 385 (Seven Sisters)	*	4004
Smith & Hamill, Bishop 1, sec 70, 2 mi n Hoffman field	*	3010
The Texas Co., H. Wendt 21, sec 68, (Loma Novia)	¶15	2725
Valley Osage Oil Co., Wm. Hubbard 7, sec 75 (Loma Novia)	600	2609
GOLIAD COUNTY—		
Diamond Half, Gillette 2, J. Gomez sur (N. Pettus)	300	3694
GUADALUPE COUNTY—		
Suggs & Reedy, Sherrill 1, 460 ft nel, 1345 ft nwl of 100-ac lease, Allen sur	*	1262
W. J. Walton et al, A. Zoboroski 6, J. D. Clements sur (Zoboroski)	200	2224
HIDALGO COUNTY—		
Weekly Oil Co., F. B. Guerra 1-B, Tr 12, por 41 (Samfordyce)	350	2772
McMULLEN COUNTY—		
Loma Oil Co., Jacob Corp 105-A, J. Faddir sur (Jacob)	10	977
Whisenant & Trenchard, Roos Bros 1, se se sec 93	*	2908
NUECES COUNTY—		
Culton & Republic, Baldwin 1-C, blk 13, Russell Farm Lots (Saxet Heights)	*	7020
J. K. Culton, A. Savage 2, Villareal sur (Saxet Heights)	1000	4106
D. H. Hawn, Mary Hoxie 1, Villareal sur (Saxet Heights)	*	4127
A. F. Holliday, J. Griffith 1, Frank sur (Saxet) owdd, old td 5602	1500	5844
Marine Oil Co., P. C. Worley 2, Villareal sur (Saxet Heights)	525	4081
J. P. Nash, G. W. Hatch 1, Kinney sur (Saxet Heights)	*	5202
W. A. Richardson, Meridith 1, C. Land sur (Saxet)	600	4423
Taylor Refining Co., W. E. Brennan, Kinney sur (Saxet Heights)	325	4084
SAN PATRICIO COUNTY—		
Magnolia, Corpus Christi Bank 6, Hunter sur (Plymouth)	275	5905
STARR COUNTY—		
Harter & Mayhew, Sanches 3, 739 ft nl, 1112 ft wl sh 69, por 72	*	505
TRAVIS COUNTY—		
Mrs. R. M. Turner, Abramson 1, Kimbro sur (Kimbro)	*	805
VICTORIA COUNTY—		
Barnsdall & Costa, J. S. Wheeless 2, Brownson sur (Placedo)	1000	4744
Ortiz Oil Co., Wm. Dietzel 1, R. Manchola gr (Coleto Creek)	*	3010
WEBB COUNTY—		
Mills Bennett, A. Lopez 2, sec 111 (Lopez)	850	2244
A. Montemayor 8, sec 114 (Lopez)	625	2179
The Hunter Co., A. S. Billings 4, sec 113 (Lopez)	200	2161
Magnolia, J. Benavides 4, blk 312, Hale sub, Arispe gr (Cole)	325	2834
South Texas Oil Co., Fee 1, 330 ft nl and wl, blk 21, sec 768	*	2676
ZAPATA COUNTY—		
J. J. O'Hern, M. J. Raymond 1, 487 ft nel, 330 ft nwl blk 5, O'Hern sub sh E, por 27	*	2658
The Texas Co., Whitehead 86, C. Blanco gr (Escobas)	11	1260

*Failures; †Junked; ¶Million cu. ft. gas.

Balcones Fault

HOLDING ATTENTION OF SOUTH TEXAS OPERATORS

San Antonio.—Balcones Fault zone continues to hold the spotlight of interest in South Texas with additional acreage being added to the proven sector of Pearsall field, Frio County, and several more deep wildcats reaching interesting depths.

Austin chalk production in Pearsall field, Frio County, is giving a little trouble with well completions. The wells are showing nice initial flows, however, after being shot and acidized.

Deep production at Pearsall was definitely extended one mile northeast when T. Davis et al's Halff and Oppenheimer 1, Clare Survey, showed about 150 barrels of oil per day on swabbing. The well has been shot and is in process of completion, and is expected to materially increase. Top of the chalk is recorded at 5330 feet, with the total depth at 5433 feet.

One and one half miles east of the deep production, Amerada Petroleum Corporation's E. O. Kothman 1 topped the chalk at 5262 feet and is bottomed at 5506 feet, where it jetted about four barrels of oil. It will be shot in effort to increase the flow.

The other two wells in Pearsall field being completed in the deep horizon are owned by the Amerada Petroleum Corporation. McWilliams 1 on Tract 3 is being cleaned after a shot of 300 quarts at 5575 feet showed a material increase in fluid. Same fee, but on Tract 17, is a completion at 5676 feet, but no details are available.

As a result of the showings in the Kothman well, a rather active leasing play is being carried on to the east of the Amerada block and extending several miles east of the town of Pearsall. It is now believed that the field may be materially extended in that direction.

Walter Blumenthal's Q. V. Crain 1, near the Milam County line, topped the Edwards lime at 6294 feet, and drilled to 6331 feet, where it showed 120 feet of sulphur water, 270 feet of mud and a little oil and gas in 15 minutes. It was carried ahead to 6340 feet. A geophone was run, and the well is being plugged back to 6328 feet for a drill stem test at 6313-28 feet. A side wall packer will be set. As a result of the showings in this well, at least one more wildcat will be drilled on the structure within the near future, it is reported.

Across the line in Zavalla County, three deep tests are being drilled on strike with the deep production. Frank Buttram et al's Whitecotton 1 is down 2634 feet, while Leona Oil Corporation's George West 1, Bustillos Survey, is making hole below 4025 feet.

Bay Oil Corporation and associates spudded National Bank of Commerce of San Antonio 1, A. B. & M. Survey No. 87, in southeastern Zavalla County, early in the week under a contract to go to Buda lime or 6500 feet on a 2800-acre block obtained in a farm-out deal with Amerada Petroleum Corporation.

H. F. Sackett, Tulsa independent operator, obtained the block from Amerada, the acreage lying in the southwestern part of an 85,000-acre block owned by that firm. Sackett then made a deal with Bay Oil Corporation, which is understood to have obtained help from other parties.

Several large wells have been completed in the Austin chalk on the seismograph structure said to be about 28 miles long. However, considerable difficulty has been experienced in getting through the chalk because of gas pressure and volume.

In event that the test is completed in Austin chalk it will be necessary that Bay Oil Corporation move over and start another test to Buda lime or to 6500 feet to satisfy the contract.

Royalty is reported selling for $50 per acre in the vicinity of the test.

RIO GRANDE VALLEY

Campaign for Frio oil regarded as important

Mission, Texas.—Several deep wells in the Rio Grande Valley retain the greatest interest for this district at this time. The majority of this deep work is to test Frio sands below 7500 feet, the deepest single drilling play in South Texas at this time.

Quintana Petroleum Corporation's Engelman 1, four miles south and slightly east of the Mestenas field, Hidalgo County, is coring at 7285 feet. It has been coring solidly for the past several thousand feet and likely will continue to core down to 7500 feet. The well originally was announced as a 6800-foot hole, but is being carried much deeper. It is on a highly praised geophysical picture.

In the same county other deep operations are in the Mercedes area, where the Union Sulphur Company is running three rigs. American et al 7, located 4000 feet east of production, failed to develop production between 7530 feet and its total depth of 7608 feet and has plugged back to gun perforate 5-inch casing around 7450-70 feet. American 8, north of the field, which was tied up with a fishing job at 7466 feet for several days, has succeeded in recovering the lost core head and is coring again. The company is making hole below 2000 feet in American 9, an inside location.

In Willacy County, Shell Petroleum Corporation is resuming drilling after installing new boilers at Yturria Land and Cattle Company 1, shut down several days at 2500 feet. The other boilers exploded killing two men and injuring a third. It is a 9200-foot contract.

Immediate drilling of the new 2900-

foot sand in the Samfordyce field, Hidalgo-Starr Counties, looms as the second well tests that horizon. The well is Henshaw Brothers and Lee Davis' Farias Heirs, south of the deep discovery well. It is at a total depth of 3024 feet, having logged the oil sand at 2984-87 feet. An electric formation testing device is being run and casing possibly will be set. The well originally was drilled by W. F. Lacy, but stopped at 2860 feet after showing gas in the regular horizon topped the the 2769.

J. T. Barlow et al's Chapa 1, north of the field and in the new sand, set casing at 2955 feet in shale. It will test the sand section which commenced at 2936 feet.

One producer was completed and four more were in the sand or in some stage of completion in the regular Samfordyce sand as the week closed.

Laredo.—One of the most important strikes in months in the Mirando district was considered to be in the making as the week closed. Magnolia Petroleum Company's Minnie Kincaid 2, southeastern McMullen County, made a drill-stem test in the Cole sand at 1824-36 feet, where it developed 500 pounds pressure and an odor of oil in 6½ minutes. The well is drilling ahead to the Government Wells sand. The test is located in the southeast corner of Section 86 and is one mile southeast of Kincaid 1 which was abandoned earlier in the year at 3356 feet. This well logged the same sands about 150 feet lower. The block is controlled almost entirely by Humble Oil & Refining Company and Magnolia Petroleum Company. Of particular interest is the fact that the well indicates a probable producer in the Government Wells zone. Should it produce at that level, it will be the northermost of the producers in that sand, being more than 10 miles northeast of Seven Sisters.

L. E. FOUST, who has been superintendent of Associated Oil Company's Kern Midway, McKittrick and Lost Hills division in California, has been assigned to special duties in the land department, with headquarters in San Francisco.

New Coastal Field

COTTON LAKE PROSPECT PROMISES MIOCENE OIL

GULF COAST

WEEKLY STAFF REPORT

Houston.—Salt Dome Oil Company and Gem Oil Company discovered a new oil field in Chambers County, April 9, 1936. A. B. & V. Lawrence 2, Cotton Lake prospect, S. Barrow Survey, made a drill stem test in the lower section of Marginulina formation from 6642 to 6661 feet and showed 650 feet of clean 36 or 37 gravity oil, 90 feet of oily mud and 30 feet of mud in eight minutes through a quarter-inch choke on top and bottom. In 3½ minutes, while making test, it showed a pressure of 50 pounds. After seven minutes the well had a working pressure of 100 pounds. While breaking down the drill stem the well made several heads of oil and mud. At the end of the week the operators were running 7-inch casing.

Lawrence 2 was bottomed in saturated sand. Oil sand was logged from 6652 to 6661 feet. While drilling to the bottom, the operators had an odor of gas from 5383 to 5391 feet, and another sand with a fair odor of gas and distillate from 5416 to 5425 feet. Salt water sand was cored from 5472 to 5476 feet. Marginulina formation was encountered at 6394 feet.

Cotton Lake's discovery well is located southwest of Salt Dome Oil Company and Gem Oil Company's Lawrence 1, which was abandoned at 7005 feet in November, 1935, in the Frio formation. This well had 80 feet of Frio sand which carried salt water.

Cotton Lake prospect was discovered by geophysics by Salt Dome Oil Company and Gem Oil Company and was later checked by Humble Oil & Refining Company. Tide Water Oil Company, Fohs Oil Company, The Texas Company, and Stanolind Oil & Gas Company also worked in the area with geophysical instruments.

Salt Dome Oil Company and Gem Oil Company acquired the acreage in this area in 1935 and started an extensive leasing campaign. Acreage was being leased at from $175 to $200 per acre. Humble Oil & Refining Company has acquired scattered acreage in this area and a geophysical shooting option from Salt Dome and Gem Oil Company.

Plug will be drilled on Lawrence 2 the coming week. Storage tanks are being erected. If it proves a commercial producer then Fohs Oil Company, Tide Water Oil Company, and Humble Oil & Refining Company will make locations for test wells. The three operators have offset acreage to Lawrence 2. Fohs Oil Company has 72 acres next to the well and Tide Water Oil Company has around 48 acres. Humble Oil & Refining Company has the south offset acreage.

Salt Dome Oil Company and Gem Oil Company's Lawrence 2 is 200 feet from the north and south lines and 275 feet from the most easterly east line of an 83-acre tract in a 333.5-acre lease or approximately 10,300 feet from the west line and 2800 feet from the north line of the S. Barrow Survey, Chambers County.

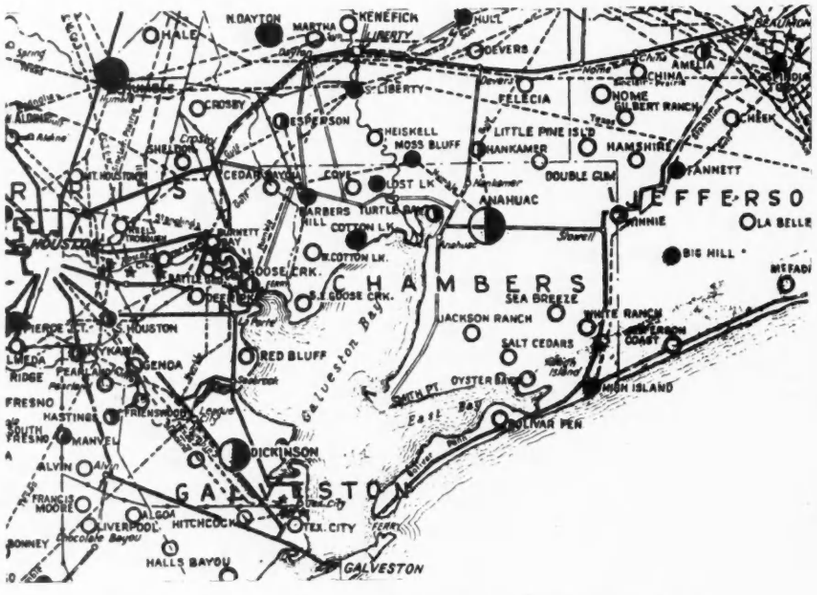
Anahuac Extended

Anahuac field, Chambers County, was extended 2000 feet east April 10 when Humble Oil & Refining Company's Lord 1, H.&T.C. Survey, Section 50, came in at the rate of 26 barrels per hour through quarter-inch choke from 7067 feet.

The well was generally believed dry when it drilled to 7243 feet and failed to show oil in sand topped at 7211 feet. However, it was plugged back to 7067 feet and 7-inch casing was cemented at 7046 feet. The operators are reported to have 10 feet of sand from 7045 to 7055 feet, shown on an electrical logging device.

Lord 1 topped the Discorbis at 6128 feet, Heterostegina at 6439 feet, and was in the Marginulina sand at 6908 feet. It was running lower structurally than Engles 7, 2000 feet west of Lord 1. The test is located 466 feet out of the southeast corner of the H.&T.C. Survey, Section 50.

Humble Oil & Refining Company's White 8, on the north flank of the field,



Showing location Cotton Lake in Chambers County, Texas

was also completed April 10. The well came in for 20 barrels per hour through ¼-inch choke from 7101 feet. Casing was perforated between 7086 and 7099 feet with 20 holes. The well was originally completed at 7095 feet in sand showing oil for 10 barrels per hour through ¼-inch choke but due to a gas/oil ratio of 11,966 to 1, it was killed and reworked. White 8 topped the Discorbis at 6041 feet, Heterostegina at 6385, Marginulina at 6737, and the Frio at 7071 feet.

Sun Oil Company added a new producer at Anahuac field last week. White 10 was completed at 7087 feet for 29 barrels per hour through ¼-inch choke. Tubing pressure was 1075 pounds; casing pressure, 1150 pounds. Seven-inch casing was set at 7030 feet.

Humble Oil & Refining Company's Grippon 3, H.&T.C. Survey, Section 51, was waiting on cement to set at 7042 feet. Grippon 3 was drilled to 7241 feet in sand with no showings after topping the sand at 7226 feet. Sand showing oil was cored from 7048 to 7067 feet and the hole plugged back to 7076 feet.

Amelia Outpost Dry

Humble Oil & Refining Company abandoned Hebert Broussard 1, 3500 feet northeast of the discovery well at Amelia in Jefferson County. The test was drilled to 8261 feet and failed to pick up the regular producing horizon for the field. The test had a salt water sand at 6858 feet. Hebert Broussard 1 evidently cut a fault and drilled on the downthrow side to 8261 feet. It topped the Discorbis at 5692 feet, Heterostegina at 6050, Marginulina 6145, and the Frio at 6425 feet.

The company has made location for S. L. Guinn 1. It is 591 feet from the most northerly north line and 1002 feet west of the east line of a 95.72-acre tract, or approximately 600 feet south and 300 feet east of the southwest corner of the Gulf fee 4.17-acre tract in the C. Williams Survey. It is south of the discovery well.

Humble's Miller 2, west of the discovery well and 1850 feet north of Miller 1 (which was abandoned some time ago), was drilling in a sidetracked hole at 6797 feet at the end of the week and appears to have missed for a second time the Amelia pay, which is found around 6772 feet. The hole was drilled to 7882 feet and the hole was found to be off 9 degrees at 7865 feet. It was plugged back to 6502 feet and sidetracked at 6508 feet.

Reports last week that a new sand was discovered at 3500 feet in the Spindle Top field, Jefferson County, by Stanolind Oil & Gas Company's MacFaddin 19, were found to be erroneous. Four or five years ago Yount Lee Oil Company completed several wells in the field at 3500 feet. Stanolind Oil & Gas Company reworked MacFaddin 19, and carried it down to the 3500-foot sand and made a 60-barrel producer. According to reports, it probably will be the last well to be completed in that sand.

South Houston Extension

South Houston field, Harris County, was extended approximately 900 feet south when Stanolind Oil & Gas Company completed its Drilling District 6, center of Lot 6, Block 11, for 257 barrels in 14 hours from 4775 feet. The well was flowing through ¼-inch choke with a tubing pressure of 950 pounds; casing pressure was 1300 pounds. Drilling District 6 topped a gas sand at 4532 feet and an oil sand at 4603 feet. A drill stem test was taken from 4575 to 4700 feet. The test was made in 14 minutes through ¼-inch choke on top and bottom. The well showed 420 feet of oil and 810 feet of mud and oil. Seven-inch casing was set at 4599 feet. Stanolind's Drilling District 7 made only 54 barrels in 15 hours through a ¼-inch choke when completed at 4773 feet last week. Tubing pressure was 400 pounds; casing pressure 500 pounds. Gas sand was found in this well at 4451 feet and oil sand at 4719 to 4729 feet and from 4733 to 4751 feet. Seven and five eighths-inch casing was set at 4598 feet. Drilling District 7 is in the center of Lot 10, Block 37 of the H.&T.B. Survey, Section 5.

Stanolind Oil & Gas Company has made location for W. A. Griffin 1, northeast of Diadem Oil Company's Dean 1. It is 111 feet east and 27 feet north of the southwest corner of tract 148 in the South Houston Gardens Subdivision No. 6.

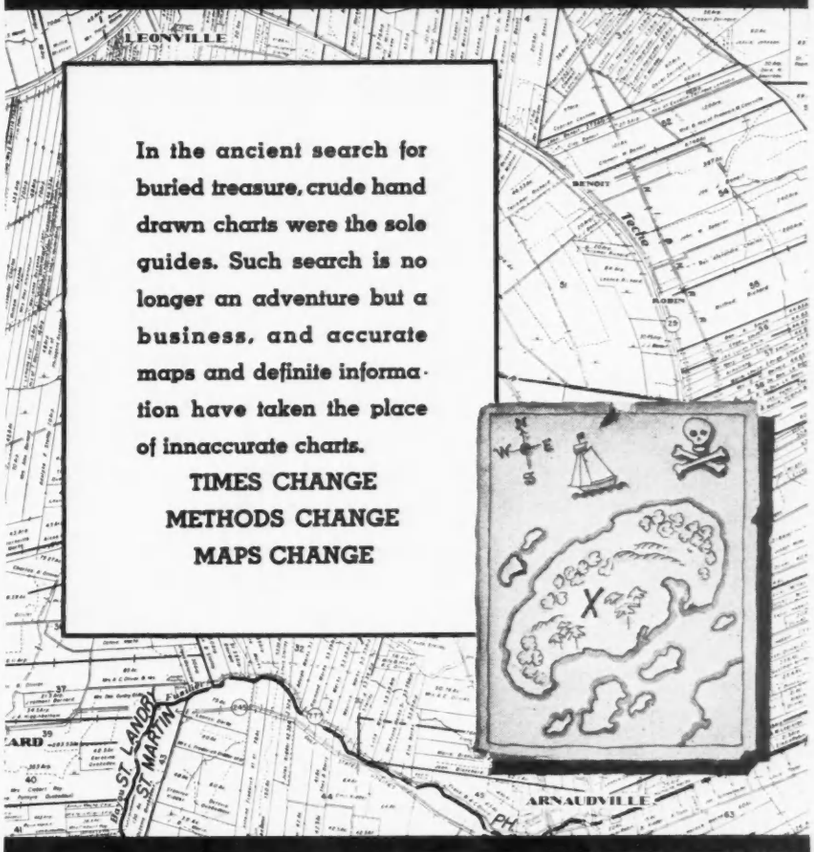
Flank Oil at Dickinson

The first oil production on the southwestern side of the Dickinson field, Galveston County, was established during the past week when Coastal Petroleum Corporation completed Maco Stewart 3 for 25 barrels of 39.3 gravity oil per hour from the Frio sands.

Maco Stewart 3 was drilled to 8569 feet in oil sand and 7-inch casing was set to the bottom. The casing was perforated from 8535 to 8545 feet with 24 holes. After washing, the well started flowing 25 barrels per hour through ¼-inch choke with a tubing pressure of 1200 pounds; casing pressure was 1200 pounds. The well had a gas sand at 8293 feet. This oil dis-

In the modern hunt for buried treasure the most important tools are

ACCURATE MAPS



In the ancient search for buried treasure, crude hand drawn charts were the sole guides. Such search is no longer an adventure but a business, and accurate maps and definite information have taken the place of innaccurate charts.

TIMES CHANGE
METHODS CHANGE
MAPS CHANGE

EDGAR TOBIN AERIAL SURVEYS

SAN ANTONIO, TEXAS
Pershing 9141

HOUSTON, TEXAS
Lehigh 4358

There can be no finer map than a reproduction of the land itself

covery topped the Discorbis at 6879 feet, Heterostegina at 7151 feet, and Marginulina at 7448 feet.

There have been two other completions in this section of Dickinson field, both making gas and distillate. However, the wells produced distillate in commercial quantities.

Humble Oil & Refining Company probably will make a location in this area which will definitely establish whether the Dickinson and Gillock field is one whole field or two separate fields.

Humble Oil & Refining Company has made location in Dickinson for Townes 3. It is 800 feet southeast of Townes 2 and 466 feet west of the east line of lease in the J. S. Jones Survey.

Hastings field, Brazoria County, was extended one location west during the past week when Stanolind Oil & Gas Company completed Droegmeyer 1 for 218 barrels in 8 hours through ¼-inch choke. Tubing pressure was 825 pounds; casing pressure, 860 pounds. The sand was topped at 6036 feet and 7-inch casing was set at 6019 feet. The test is 333 feet north and 330 feet west of the southeast corner of a 40-acre tract in the H. & T. B. Survey, Section 36.

Stanolind Oil & Gas Company has announced five new locations at Hastings. Williams 4 is 377 feet northeast of the southeast corner of an 81.13-acre tract along the southeast line, thence 330 feet northwest at right angles, in the A. C. H. & B. Survey No. 1. Williams 5 is 566 feet west of the east line and 230 feet north of the south line of an 81.13-acre tract in the same survey. Turner 5 is located 1853 feet northeast from the southwest corner of a 195-acre tract, thence 230 feet southeast at right angles in the same survey. Turner 6 is 2785 feet northeast from the southwest corner of a 195-acre tract and 330 feet southeast at right angles in the A. C. H. & B. Survey. C. D. Brown 1 is 330 feet north of the south line and 368 feet east of the west line of a 10-acre tract in the H. & T. B. Survey No. 29.

Grigsby Prospect Test

On the Grigsby prospect in Hardin County, David B. MacDaniels has made location for Nona Mills 1. It is 466 feet north of the south line and 466 feet west of the east line of the E. Emanuel Survey. MacDaniels has a block of 4000 acres in this area, which was acquired in 1935. He worked the area with torsion balance and surface geology.

MacDaniels made the location for Glenn H. McCarthy's White 1, north of the Anahuac field, Chambers County, which was completed as an oil producer and which started an extensive drilling campaign in that area. Besides the MacDaniels holdings, Sun Oil Company and Stanolind Oil & Gas Company have scattered acreage in the area.

Atlantic & Brace's E. E. Hardy 1, 3660 feet north of the discovery well of Hardin field, Liberty County, was drilling in sandy shale at 7275 feet April 10. The well topped the Cockfield at 7190 feet and is reported running around 169 feet higher than the discovery well. The well should be down to the producing sand the coming week. The test is located in the J. Robeson Survey.

The sixth oil producer was added to the Van Vleck field, Matagorda County, during the past week. Skelly Oil Company's Cobb B-4, M. Cummings Survey, was completed through 49 perforations in the casing from 7480 to 7494 feet, and came in at the rate of 525 barrels in 17 hours through ¼-inch choke. Tubing pressure was 1600 pounds; casing pressure, 2250 pounds. The gas/oil ratio was 850 to 1. The bottom of the hole is 7502 feet, and 7-inch casing was set at that depth.

Withers Growing

Withers field, Wharton County, was extended northeast during the past week when The Texas Company completed its Pierce Estate C-3 for a commercial oil well. The well was drilled to 5565 feet and 7-inch casing was set at 5557 feet. It came in for 440 barrels daily through ¼-inch choke. Tubing pressure was 550 pounds; casing pressure, 600 pounds. The Texas Company's Pierce C-3 is located 933 feet north and 62 degrees east from Pierce Estate C-1, J. Caldwell Survey.

The same company has made location for Pierce Estate C-5, which was drilling at 1500 feet April 10. The well is located 933 feet north and 62 degrees east from C-2 and 933 feet south and 28 degrees from C-3 in the J. Caldwell Survey.

In the Pickett Ridge field, south of the Withers field, Wharton County, The Texas Company completed two new producers. Pierce Estate A-15 was completed at 4712 feet for 15 barrels per hour through ¼-inch choke. Tubing pressure was 475 pounds; casing pressure 425 pounds. Seven-inch casing was set at 4703 feet. Pierce Estate A-16, I. & G. N. Survey No. 38, was finaled at 4707 feet for 17 barrels per hour through ¼-inch choke with a tubing pressure of 500 pounds; casing pressure was 400 pounds. Seven-inch casing was set at 4701 feet.

Garwood Watched

Sterling Oil & Refining and Coyle-Concord's Powell B-2, Garwood area, Colorado County, has attracted considerable attention for the past five or six months among the Gulf Coast operators. The well was spudded in the middle of last year and drilled to 3760 feet and topped a sand. A drill stem test was made from 3740 to 3760 feet which showed five stands of salt water and one stand of mud. The test was made in 10 minutes through ¼-inch choke. Two other drill stem tests were made from 4070 to 4080 feet and 4080 to 4125 feet. Both of the tests failed to show anything. At 5937 to 5955 feet a 7-minute drill stem test was taken; it showed one thribble of oil and three thribbles of salt water. The test was made through ¼-inch choke. From 5900 to 5940 feet a test was made which showed salt water with a 200-pound pressure.

Powell B-2 was then carried to 6120 feet, logging a sand showing oil at 6110 feet. A drill stem test at 6113 to 6120 feet showed 450 feet of oil and 30 feet of mud and salt water. The oil tested 43 degrees. Seven-inch casing was set at 6108 feet. This sand was given a production test and showed 50 percent oil and 50 percent salt water. The tubing was lowered to 6118 feet and the well continued to make water and oil. The well made a 45-minute head of oil and then went dead. The hole was carried on down to 6230 feet, and on a drill stem test from 6154 to 6160 feet it showed 63 stands of salt water. The operators then drilled on down to 6755 feet.

Powell B-2 was drilled to 6755 feet in search of the Cook Mountain East Barnard sand, which had previously showed oil and gas. This sand was found in Powell B-2, but it was dry. The hole was plugged back to and sidetracked at 5815 feet and redrilled into the sand. Another production test was made. The well was placed on ½-inch and ⅜-inch choke and showed a pressure of 1200 pounds. It pulled in the water and sanded up and killed itself.

The operators then set another whipstock and sidetracked at 5468 feet and redrilled to 5920 feet in sand showing oil. This new hole was the third hole made by Sterling Oil & Refining Company and Coyle-Concord. The sand showing oil was topped at 5917 feet. Five-inch liner was run from 5357 to 5916 feet, then 10 feet of 3-inch screen, 99 feet of blank, and a 9-foot packer. Two-inch tubing was hung at 5800 feet. Powell B-2 was washed in April 4, flowing at the estimated rate of 3 to 4 barrels per hour through 1/32-inch choke. The fluid contained 80 percent oil and 20 percent wash water. Tubing pressure was 1460 pounds; casing pressure, 700 pounds. April 5, the well was put on 1/8 and 1/16-inch choke, and it flowed at the rate of a barrel of fluid per hour, estimated to be 10 percent oil and 90 percent basic sediment and water, with the water turning to salt water. The tubing pressure at this time was 1400 pounds and casing pressure 700 pounds. On April 7, Powell B-2 was placed on 1/16 and 5/64-inch choke, and it showed a tubing pressure of 1300 pounds and casing pressure 975 pounds. At this time the manifold froze up. April 8, from 10 a.m. to 9 p.m., the well made dry gas. Then for 40 minutes the well made a head of clean 40 gravity pipe line oil through 1/16-inch choke. The tubing pressure was 1250 pounds; casing pressure, 1000 pounds. Then from 10 p.m. until 3 in the morning of April 9, the well made nothing but drilling mud. The pressure then dropped off considerably. After this the well started making 75 percent water and 25 percent oil, with pressures of 1250 pounds.

The most encouraging factor about this wildcat is that it has steadily held its pressures. It is not known where the salt water is coming from, but it is believed that the water is coming in through the hole where a test was made when the operators used ½ and ⅜-inch choke. The well showed a large pressure on this test and started making water.

Powell B-2 does not condemn the area. It is approximately 50 feet higher on the Upper Saline Bayou formation than other wells drilled to the southeast, and 100 feet higher than the McLane well to the east. The well is running favorably structurally with other wells drilled in this area. Moreover, it found a sand different from those in other wells drilled in the area, with the exception of the McLane well.

Sterling Oil & Refining Company and Coyle-Concord Oil Company will drill another well in this area in the near future, north of Powell B-2. It is believed that the new well will be located on the apex of the structure, and with the information obtained from Powell B-2, a good chance of developing a commercial producer is seen. The operators hold 13,000 acres in this area.

The operators intend to let Powell B-2 flow on different size chokes to see what it will do. The latest report from the well is that it is making from 2 to 3 barrels of fluid per hour showing a large percentage of salt water. Tubing pressure is 1200 pounds; casing pressure, 1000 pounds.

C. P. WATSON, vice president of Seaboard Oil Company and Kettleman North Dome Association, with headquarters in Los Angeles, spent a part of last week in Houston.

E. P. OLDHAM has been made vice president and manager of the California branch of the Walter O'Bannon Company with headquarters at Long Beach.

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Humble, Hebert Broussard 1	*	8261
ANAHUAC—		
Humble, Lord 1	624	7067
White 8	480	7101
Sun, White 10	696	7078
ARIOLA—		
Republic Prod. Co., Ariola 3 (wo)	*	4226
BARBERS HILL—		
Texas Gulf Prod. Co., Fitzgibbons 1 (wo)	413	5209
McLean 11 (wo)	625	4583
Wilburn 7	137	4405
BOLING—		
Texas Co., Taylor A-16	150	3484
CONROE—		
Sun, Foster 27	178	5120
A. A. Cameron, Dudley 6	133	5061
DAMON MOUND—		
Sinclair-Prairie, Masterson 1	150	1406
DICKINSON—		
Coast Pet. Corp., Maco Stewart 3	600	8569
GOOSE CREEK—		
Gulf, Beaumont Pet. Co., 4 (wo)	174	2729
HANKAMER—		
Gulf, Boyt 21	20	2698
HASTINGS—		
Stanolind, Droegemeyer 1	651	6052
HULL—		
Humble, Guedry 39	504	4138
MYKAWA—		
West Prod. Co., Forbes 1 (wo)	350	4590
PICKETT RIDGE—		
Texas Co., Pierce Estate A-13	312	4709
Pierce Estate A-15	360	4712
Pierce Estate A-16	408	4707
PIERCE JUNCTION—		
Rio Bravo Oil Co., Fee 10	*	4635
RACCOON BEND—		
Humble, Remmert 3	1080	4110
SOUTH HOUSTON—		
Stanolind, Drilling District 6	432	4775
Drilling District 7	96	4773
SOUTH LIBERTY—		
Gainer Oil Co., Harrison 5	15	1006
TOMBALL—		
Humble, West 1	175	5560
VAN VLECK—		
Skelly Oil Co., Cobb B-4	768	7502
WITHERS—		
Texas Co., Pierce Estate C-3	440	5565
COLORADO COUNTY—		
E. W. Johnson, Drymalla 1, e of Columbus, T. Coleman sur	*	5156
MONTGOMERY COUNTY—		
Chapman & Smith, Delta Land Co. 1, Dacus prospect, T. Sheppard sur	*	4003

*Failures; †Junked; ¶Million cu. ft. gas.

Third Jeanerette Sand

DISCOVERER'S THIRD TEST EXTENDS FIELD 1208 FEET

Lake Charles.—Out of three wells drilled in the Jeanerette field, St. Mary Parish, three producing horizons have been discovered. The latest discovery was a rich body of oil sand from 6741 to 6769 feet, encountered last week in Herton Oil Company's Carter 1. Moreover, Carter 1 will extend the producing limits of the field 1208 feet east if completed as a commercial producer.

Herton Oil Company's Carter 1, Section 38-13s-9e, made a drill stem test from 6741 to 6769 feet and showed 66 stands of 30 gravity oil and 12 stands of mud, and good gas pressure. The test was made in 15 minutes through two ¼-inch chokes.

After setting 7-inch casing at 6748 feet, operators were preparing to drill plugs April 9 on Carter 1. Due to bad weather in the Louisiana Gulf Coast last week the operators were delayed in completing the well.

With the discovery of this new sand, Herton Oil Company has three known sands in the field. Each of these sands carries different gravity of oil. The discovery well, Roane 1, was completed in sands from 7470 to 7490 feet for 25 barrels per hour of 41.6 gravity oil. Roane 2, 825 feet east of the discovery well, was completed at 6653 to 6665 feet for 1089 barrels of 36.5 gravity oil. The new sand, from 6741 to 6769 feet, showed 30 gravity oil on a drill stem test. The 7470-foot sand has not been named by the operators but the 6658 and 6741-foot sand has been named Roane and Carter sands, after their respective discovery wells. All three sands are in the Miocene formation. The deep sand and Roane sand showed four and nine ohms, respectively, on an electrical logging device.

Herton Oil Company also was preparing to drill plugs on Banta 1, April 10, 1936. This well will be completed in the Roane or the 6650-foot sand. It will likewise extend the field 960 feet west. Banta 1, Section 40-13s-9e, had sand showing oil from 6612 to 6650 feet, the bottom of the hole. Seven-inch casing was set at 6638 feet. On a drill stem test of the above sand the well showed a large gas pressure. The second drill stem test failed. It was decided to set casing and make a production test. If this well proves as a commercial producer it will be the second well to produce from the Roane sand.

The same operator's Roane 3, Section 40-13s-9e, was drilling in sandy shale at the end of the week at 6350 feet. It should be down to the Roane sand April 10 or 11.

New Iberia Extension

New Iberia field, Iberia Parish, was extended 1000 feet west last week when Canal Oil Company's Bolivar 1, Section 56-12s-7e, came in at the rate of 384 barrels daily from 3118 feet. At this depth the well showed 20 feet of oil sand.

Bolivar 1 was drilled to 4778 feet in salt with the top of the formation found at 4767 feet. Seven-inch casing was set at 4581 feet. It was perforated below 3118 feet, and was placed on a ¼-inch choke. The initial yield was 384 barrels daily. Tubing pressure was 750 pounds.

Jefferson Lake Oil Company's Lake Pigneur 274, Jefferson Island dome, 12s-5e, Iberia Parish, perforated casing from 8465 to 8466 feet with 12 holes and swabbed salt water and no oil. The operators will either plug the test back and sidetrack, or drill a new well.

In the Bayou Bouillon field, Iberville Parish, Southern Oil Company's State 1, Section 13-9s-8e, has perforated casing between 3010 to 3060 feet and was preparing to make a test at the close of the week. State 1 drilled to 3132 feet in sand showing oil. Top of the sand was found at 3106 feet and 7-inch casing was set at this depth. The hole was swabbed down to 2000 feet and showed salt water with a little oil.

New Caillou Sand

Possibility of a new producing sand was indicated in The Texas Company's Terrebonne Bay 2, Section 19-23s-20e, Caillou Island, Terrebonne Parish, during the past week when the well made a drill stem test from 6829 to 6838 feet and showed three fourbles of oil.

The Texas Company drilled Terrebonne Bay 2 to 6842 feet. A sand showing oil was encountered at 6838 feet. Sand with an odor of oil was found from 6829 to 6838 feet. After taking a drill stem test from 6829 to 6830 feet, 3 fourbles of 37.5 gravity oil and 6 fourbles of mud were recovered. The well also showed a good gas pressure. It is reported that the operators will set casing to 6829 feet and make a production test. The regular producing horizons for the field are in Miocene formation at 3239 to 4981 feet, 5981 feet and 6094 feet. Terrebonne 2 is the deepest test to be drilled in the field.

The Texas Company's Caillou Island 22, Section 10-23s-20e, was completed last week at 4205 feet. It topped oil sand at 4150 feet. Seven and five eighths-inch casing was set at 4150 feet. The well came in for 1177 barrels of 32.2 gravity oil through a ½-inch choke.

Tepetate May Be Defined

Tepetate field, Acadia Parish, may be defined on the eastern side. Last week Loffland Brothers et al's L. C. Bowles 1-A missed the regular producing sand at 8300 to 8313 feet. April 10, 1936, the operators were waiting on an electrical logging device at 8379 feet. A hard sand was cored from 9361 to 8379 feet. It showed no oil. The eastern outpost test is 2310 feet

south and 660 feet west of the northeast corner of Section 28-7s-2w.

The same operator's L. C. Bowles 1-B, northeast flank test, was drilling shale at 6166 feet after drilling at 7419 feet, plugging back to 6450 feet, and sidetracking at 5950 feet.

Two new producers were added at Tepetate last week, one being a workover and the other a new well. Continental Oil Company's P. W. Miller 1, was completed after perforating casing from 8308 to 8314 feet with 24 holes. The well came in for 233 barrels of 49.1 gravity oil through a ¼-inch choke. Tubing pressure was 2550 pounds; casing pressure 2500 pounds. A gas sand was encountered in this test at 8303 feet. Five and three eighths-inch casing was run to bottom. A. O. Marcantel 1, Section 29-7s-2w, a workover, was recompleted through perforations at 8307 to 8312 feet. The casing was perforated with 12 holes. The well came in for 776 barrels of 35.4 gravity oil in 19 hours through a ¼-inch choke. Tubing pressure was 1400 pounds; casing pressure 1550 pounds. The well was originally completed at 8324 feet, but started showing water. Cement was pumped into the hole. It was redrilled to 8310 feet and blew out. After encountering mechanical troubles the well was plugged back to 1618 feet and sidetracked. The hole was redrilled to 8313 feet and casing set and completed.

Continental Oil Company has made location for Doris Fruge 1 at Tepetate. It is 660 feet east and 333 feet north of the southwest corner of Section 28-7s-2w.

Gillis Disappointments

Union Sulphur Company's Castle 6, between the Gillis and English Bayou field, Section 14-9s-8w, Calcasieu Parish, was abandoned at 7736 feet. This well had several sands showing oil and gas, but each section carried salt water. A sand from 5252 to 5295 feet showed gas and a sand from 5889 to 5899 feet showed oil. After testing these sands it was found they would not produce oil in commercial quantities and the test was abandoned.

Fohs Oil Company's Salt Dome (Frost) 1, also between the Gillis and English Bayou field, Section 11-9s-8w, was coring shale at 7070 feet after failing to make a producer at 5259 to 5269 feet. The well showed a heavy gas pressure at this depth and kicked the screen up in the hole. After resetting screen the operators swabbed salt water.

Union Sulphur Company's Bell 1, northeast flank test, Section 6-9s-8w, Gillis field, was drilling at 7683 feet after missing the regular producing sand for the field. If this test is a failure it will define the field on the northeast.

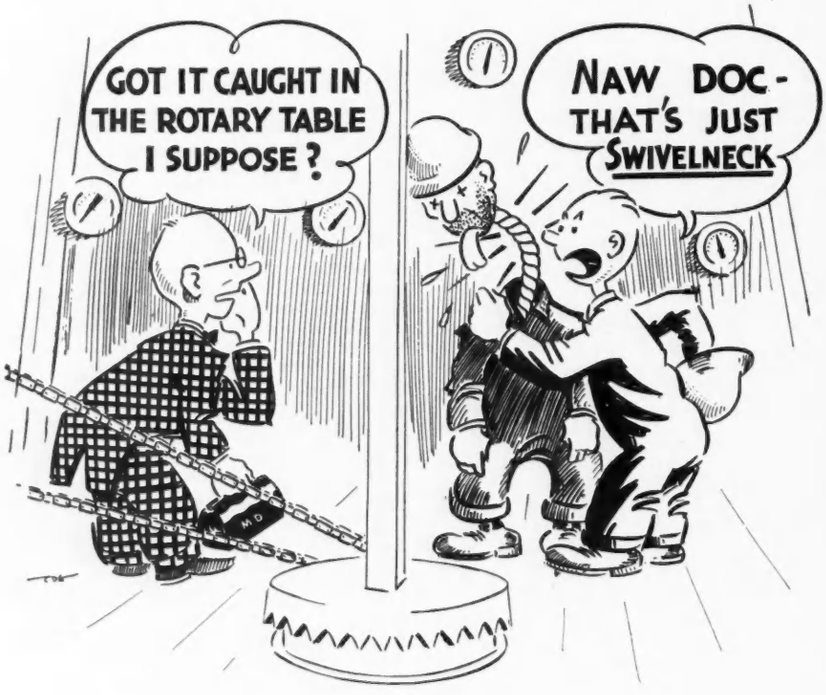
Fohs Oil Company has made location for Powers 2 in the English Bayou field. It is 275 feet west of the SEc NE¼ SW¼ of Section 14-9s-8w. It is a south offset to Powers 1.

Cankton Prospect Test

Superior Oil Producing and Shell Petroleum Corporation (Limited Oil Company) have made location for a wildcat to be drilled on the Cankton prospect in St. Landry Parish. Miller Estate 1 is 1500 feet south and 230 feet east of the northwest corner of Section 47-8s-4e.

Cankton prospect was carried in the Gulf Coast Number of The Oil Weekly, March 16, 1936, as the Bristol prospect. The prospect is 1½ miles northeast of Bosco field, St. Landry Parish. It was worked with geophysical instruments by Superior Oil Producing Company and Shell Petroleum Corporation. There are several other prospects in this area.

On the Lock Moore prospect, J. K. Lewis' Lock Moore 1, Section 32-7s-6w, Jefferson Davis Parish, was drilling sandy shale at 6677 feet and will probably be carried on down to 7000 feet before it is abandoned. The operators cored a dry sand from 6666 to 6671



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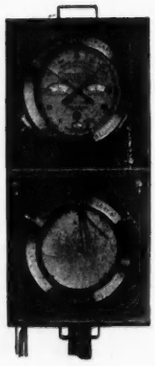

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SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAILLOU ISLAND—		
Texas Co., Caillou Island 22	1177	4205
GILLIS—		
Union Sulphur, Castle 6	*	7736
IOWA—		
Shell, Hyed 19	652	5230
LAFITTE—		
Texas Co., L. L. E. Lafitte 3	1800	4955
NEW IBERIA—		
Canal Oil Co., Boliver 1	384	3118
SULPHUR—		
Union Sulphur, Fee 822	29	3328
TEPETATE—		
Continental, Marcantel 1 (wo)	960	8313
P. W. Miller 1	233	8316

*Failures; †Junked; ¶Million cu. ft. gas.

feet. The top of the Heterostegina was encountered at 6195 feet.

Lafitte Has New Sand

A new producing level was found in the Lafitte field, Jefferson Parish, during the past week when The Texas Company completed its L. L. E. Lafitte 3, through perforations from 9390 to 9411 feet. The well came in for 1800 barrels of 38.6 gravity oil through a 3/8-inch choke. Tubing pressure was 1480 pounds. The bottom of the hole is 9455 feet. Sand showing oil was logged from 9390 to 9411 feet. Seven and five eighths-inch casing was set at 9411 feet. Casing was perforated with 50 holes from 9390 to 9411 feet. This well extended the field approximately 1000 feet east.

The same operator's Rigolette 3, Section 29-17s-24e, was setting 7⅝-inch casing at the end of the week in sand showing oil cored from 9431 to 9451 feet. A slight showing of oil was encountered from 9395 to 9416 feet. If this well is a commercial producer it will extend the field 1000 feet east. It is a south offset to L. L. E. Lafitte 3.

The above two wells are producing from higher sands than former completions in the field. The discovery well was completed at 9558 to 9572 feet, and two other wells were completed at 9600 feet.

The third commercial oil producer loomed in Garden Island Bay field, Plaquemines Parish, when The Texas Company cored oil sand in Garden Island Bay 18, Section 37-23s-33e, last week and set 7⅝-inch casing. The well had showings of oil from 4473 to 4494 feet. Bottom of the hole is 4511 feet.

Tide Water Oil Company's Smedes 2, 660 feet south and west of the discovery well, Section 57-11s-6e, St. Martinvillle field, St. Martin Parish, was preparing to run an electrical logging device to 8739 feet. The operators encountered trouble in the hole when 6 feet of core barrel was lost.

Continental Oil Company's Fee 1, 1980 feet north of the discovery well of St. Martinville, Section 18-11s-6e, was reaming at 5488 feet at the close of the week after drilling to 5939 feet. A sand which showed gas was logged at 5924 to 5928 feet.

Iowa Open Hole Record

Shell Petroleum Corporation's Heyd 19, Section 13-9s-7w, Iowa field, Calcasieu Parish, was completed as a producer last week after drilling to 9161 feet, establishing a new drilling depth record for the field. The well was plugged back to 5200 feet and 7-inch casing was set at that depth. It was completed in the regular pay sand for 652 barrels of 32.8 gravity oil through a 16/64-inch choke with a tubing pressure of 652 pounds. The top of the Discorbis was found in Heyd 19 at 6607 feet, Heterostegina at 6711, Marginulina at 8616, and the Vicksburg at 8791 feet.

Shell Petroleum Corporation's Heyd 19, set 16-inch conductor at 61 feet and 10¾-inch 40-pound surface casing at 1311 feet. The operators drilled a 9⅞-inch open hole to 9161 feet. This 7850 feet of open hole is the greatest depth the operators have drilled without setting casing. After drilling to 9161 feet the hole was plugged back to 5200 feet and 7-inch casing was set.

Shell Petroleum Corporation has drilled two other deep tests which carried open hole for considerable depth: Lacassine 1, Hayes prospect, Section 20-11s-5w, Jefferson Davis Parish, was spudded in and set 20-inch conductor at 64 feet. A 54-pound, 13⅜-inch casing was set at 2525 feet. Open hole was drilled to 8223 feet where 44-pound, 9⅝-inch casing was set. A 12½-inch hole was carried down from 2525 to 8223 feet. The operators then drilled to 9802 feet where the drill stem stuck.

The same operator's Realty 1, Houma Townsite prospect, Terrebonne Prospect, which was abandoned some time ago at 10,155 feet, set 20-inch conductor casing at 72 feet. At 2486 feet, 54-pound, 13⅜-inch casing was set. A 12½-inch open hole was drilled to 7950 feet, and then was reduced to 8¾-inch size to 10,155 feet, where the test was completed as a dry hole.

The greatest depth of open hole drilled in the Gulf Coast was Superior Oil Producing Company's A. Martinez 1, east flank test at Bosco, Acadia and St. Landry Parish. The 8044 feet from 1276 to 9320 feet, was open hole. A string of 13⅜-inch casing was set at 1276 feet and 8044 feet of open hole was drilled before the operators set 7-inch casing at 9320 feet.

Lake Charles.—Eight completions reported in the Louisiana Gulf Coast during the past week included seven oil wells with initial production of 5235 barrels. The failure was in the Gillis field, Calcasieu Parish.

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Rodessa Growing

126 WELLS PRODUCING 41,124 BARRELS DAILY

WEEKLY STAFF REPORT

Shreveport. — Seven new producers were completed last week in the Rodessa field to bring the total in that district to 130, and 13 new locations were announced, five of the latter in Cass County, Texas.

Most important of the week's completions was United Gas Public Service Company's Gipson 1, NE SW 15-23n-16w, in the northwest part of the Louisiana part of the field, completed at 6008 feet flowing 80 barrels per hour through ½-inch tubing choke, with tubing pressure 250 pounds. The well had failed to flow from 10 feet above. Its completion is another blow to the former idea of a water level of 5785 feet sub-sea in Rodessa.

A north offset to the discovery oil well of the field was also completed by this company when I. L. Young 2, NE SE 21-23n-16w, was brought in at 5995 feet flowing 42 barrels of oil per hour through ½-inch tubing choke; tubing pressure was 775 pounds. The same company completed Rodessa Oil & Land Company 12, Section 22-23n-16w, at 6005 feet flowing 58 barrels per hour through ½-inch tubing choke; tubing pressure was 425 pounds.

Other wells completed in Rodessa last week were: Haynes Production Company's Lawton 10, Section 14-23n-16w, flowing 157 barrels of oil per hour through open tubing from 6041 feet; United Gas Public Service Company's Ardis 5, Section 14-23n-16w, completed at 6009 feet flowing 35 barrels per hour through ½-inch tubing choke; United's Thomas 2, Section 23-23n-16w, completed at 6016 feet flowing 62 barrels per hour through ½-inch tubing choke; and Arkansas-Louisiana Gas Company's Rodessa 11, Section 22-23n-16w, completed at 6002 feet flowing 27 barrels per hour through 5/8-inch tubing choke.

Outpost Running High

Four and one half miles southwest of oil production, American-Liberty Oil Company's Rambo 1, J. H. Rives Survey, Cass County, logged the top of the red beds at 3330 feet; elevation is 260 feet. This was 80 feet higher on this marker than the same marker in United Gas Public Service Company's I. L. Young 1, SE SE 21-23n-16w, the first oil well in the field, and checks with gas wells well up on the high near the Rodessa townsite. This strengthens the theory that the "high" continues along the Rodessa fault southwest or that there is a separate and distinct "high" in Cass County. Rambo 1, according to several geological maps, would be adjacent to the fault as projected southwestward.

United Gas Public Service Company made two new locations last week in Cass County, one being a direct east offset to American-Liberty Oil Company's Maxie 1 and the other a south offset to it. These new location are, respectively, Mack Stewart 1, and Eva Fields et al 1, both in the John Collum Survey. American-Liberty is offsetting its producer to the west by a 330-foot and a 660-foot location, Maxie 2 and 3, respectively. The Texas Company's E. E. Hall 1, James Young Survey, was the other Cass County location.

Negotiations have not yet been closed between Haynes Production Company and Root Petroleum Company for the purchase of the former's Rodessa holdings. Several items remain to be ironed out before the transfer is effected. Under the terms of the negotiations, Haynes would get one third of the $15,000,000 consideration in cash and the rest from production.

Eastern Texas Refining Company continued to meet obstacles last week in its efforts to move Rodessa crude through its Rodessa-Longview line. The Federal Tender Board at Kilgore declined to permit movement of 120,000 barrels by this company for Pelican Oil and Gasoline Company, and later failed to grant permission for movement of 50,000 barrels reportedly sold to Tidewater Oil Company for delivery at Longview for movement to the Gulf Coast.

In the northeast offshoot of the field, Travis and associates' Norton Estate 1, Section 17-23n-15w, failed to make an oil well at 6080 feet, testing 5,000,000 cubic feet of gas with no oil through ¼-inch tubing choke. Tubing pressure

Several New Lines

RODESSA PURCHASERS BUSY MAKING LEASE CONNECTIONS

Shreveport.—Texas Pipe Line Company which recently completed a 6-inch line to Rodessa from its trunk near Oil City, Caddo Parish, has secured 15 connections from Haynes Production Company and United Gas Public Service Company at Rodessa. These connections will be completed by April 15.

Texas Pipe Line Company is reported to have bought 133,000 barrels of oil that Haynes Production Company has in storage at Rodessa and will withdraw this oil at the rate of 2500 barrels daily paying the posted price. This pipe line also has been authorized to run at the same rate per day 137,000 barrels of back allowable accumulated to April 1. It is reported that Vaughn Production Company's order for 80,000 barrels back allowable has been revoked.

Before Pelican Oil & Gasoline Company's authority to produce 20,000 barrels daily for Eastern Texas Pipe Line Company was revoked Pelican's 13 wells on the Sexton lease, Section 14-23n-16w, produced 102,000 barrels in a five-day period.

Other oil in storage at Rodessa besides that mentioned totals 75,458 barrels of which 70,407 barrels is in Louisiana and 5051 in Texas.

Eastern Texas Pipe Line Company is arranging to make connections to American-Liberty Oil Company's Maxie 1, John Collum Survey, west edge well in Cass County which on a 24-hour gauge last week made 378 barrels through fourth-inch tubing choke. Tubing pressure was 500 pounds and casing pressure 1480 pounds.

Arkansas-Louisiana Gas Company has completed its 6-inch line from Oil City to Rodessa, the terminal at the latter place being in Section 22-23n-16w, and is now building 4-inch lateral lines to other leases.

Texas Pipe Line Company has increased the capacity of its Caddo station near Oil City, which is one terminal of its Rodessa line.

Shoreline Refining Company is building a 4-inch line from the Rodessa storage it recently bought from Standard Oil Company of Louisiana to Arkansas-Louisiana Gas Company's Rodessa line.

Magnolia Petroleum Company has completed testing its new 8-inch line from Dixie, Caddo Parish, to Rodessa, and is now building a 6-inch lateral to United Gas Public Service Company's Rodessa Oil & Land Company lease.

North Caddo Refining Company is laying a 2-inch gasoline line from Section 14-23n-16w, to loading racks along the Kansas City Southern right-of-way at Rodessa.

Arkansas-Louisiana Gas Company has sold 50,000 barrels of Rodessa oil to Stanolind Oil & Gas Company for delivery to the latter's refinery at Superior, Caddo Parish. Louisiana Oil Refining Corporation, is adding 12 tanks at its Bossier City refinery to accommodate Rodessa crude. The tanks to be erected immediately are five 55,000-barrel tanks; one 10,000-barrel tank; two 5000-barrel tanks, and a number of smaller tanks, bringing the total additional tankage to be erected to 300,000 barrels.

As of April 8 there were in Rodessa 55 drilling wells, eight rigs, eight derricks, and 12 active locations.

was 2200 pounds and casing pressure, 2300 pounds.

Runs for Rodessa for three days during the last week were: from 124 wells, 43,381 barrels; from 125 wells, 40,077 barrels; and from 126 wells, 41,124 barrels.

Texas Company Enters

Entry of The Texas Company into Rodessa was made last week with location for its first test in the field. The location is E. E. Hall 1, James Young Survey, Cass County, located 330 feet from northeast corner of the E. E. Hall tract. It is one half-mile south of American-Liberty's Rodgers 1, C. M. Robinson Survey.

Sale of acreage continues in Cass and Marion Counties, East Texas, along the southwest trend of the Rodessa fault. Gulf Oil Corporation paid $350 per acre for 450 acres owned by Lide, Greer, Marr and Collins, which they secured from Arkansas-Louisiana Gas Company as a part of the purchase price of these operators' holdings in Lincoln Parish transferred to Akansas-Louisiana Gas Company. They retain a one eighth over-riding royalty on the lease they transferred to Gulf Oil Corporation.

Marathon Oil Company has acquired the east 100 acres of the 125-acre Whatley lease, east of Lodi, from H. M. Harrell and W. E. Hicks of Shreveport for a consideration of $300 per acre cash.

In Panola County, two geophysical crews are now at work, Shell Petroleum Corporation having recently moved a seismic party into the northeastern part of the county where Pure Oil Company has had a shooting crew for some time working around the C. F. Flannagan Survey.

Wildcat Gas Well

Completion last week of a wildcat test in Bienvillle Parish as a large wet gas well in the oolitic lime of the Glen Rose, below the anhydrite, in what corresponds to the Hill horizon at Rodessa, gave new impetus to activity in the North Louisiana Basin between the Sabine Upift and the Monroe Uplift.

The new gasser is Lide and Greer's Davis Lumber Company 1, NE SE 12-16n-5w. It was completed at 6144 feet, after 7-inch OD casing was cemented at 6128 feet and perforated with 19 shots at 5867 to 5870 feet. The well logged gas-saturated oolitic lime from 5867 to 5883 feet. Elevation is 305 feet.

This test topped Arkadelphia at 2287 feet, logged chalk from 2501 to 2831 feet, topped the Blossom (Ozan) at 3070 feet, and logged massive anhydrite from 5396 to 5636 feet. It gauged 70¾ million cubic feet of gas. Tubing pressure was 580 pounds; casing pressure 900 pounds, with rock pressure, when closed in, 2340 pounds. The gas rights on this block and in this well are owned by Arkansas-Louisiana Gas Company, which took over the well after it was completed.

In Bossier Parish, Magnolia Petroana has a crew doing detail work in the vicinity of the new gasser. Gulf Oil Corporation is shooting in the same parish between Castor and Ringgold, and Standard Oil Company of Louisiana has a seismograph crew working southwest from township 17 north, ranges 7 and 8 west.

In Bossier Parish, Magnolia Petroleum Company's seismograph crew is still working on a block owned by Triangle Drilling Company which centers in Section 36-23n-13w. In Caddo Parish, United Gas Public Service Company continues seismograph work on its block in township 17 north, ranges 14 and 15 west, from Cedar Grove to Cross Lake.

Large Block Taken

Centering around the F. C. Baker Survey, Harrison County, Texas, and extending into Caddo Parish in township 18 north, range 16 west, W. F. Bridewell and associates of Marshall, Texas, have assembled a 9000-acre block for a proposed test of the Rodessa pay horizons.

In Lincoln Parish, Shell Petroleum Corporation and Magnolia Petroleum Company have each bought three 80-acre tracts in Arkansas-Louisiana Gas Company's block centering around Section 32-19n-2w. Here a deep test being drilled by the latter company is now below 4400 feet. In the same parish, Arkansas-Louisiana Gas Company, which owned the gas rights on Lide and Greer's Fowler 1, Section 10-17n-4w, completed several months ago at 5300 feet, below anhydrite, to open another Glen Rose wet gas field, has added to its holdings in that area by acquiring the gas rights on the west half NW¼ 15-17n-4w, and SW NE 2-17n-4w, and south half SW 35-18n-4w, from Eastern Texas Petroleum

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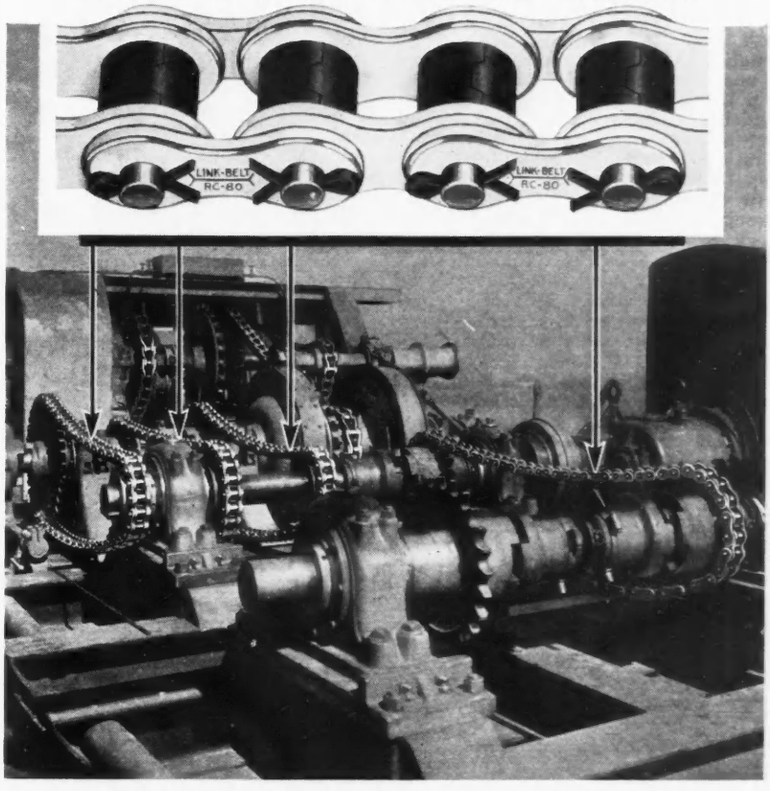

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Company (F. W. Burford) for $14,500. Eastern Texas Petroleum Company, besides the cash consideration, also gets one half-cent per thousand feet of gas produced until January 1, 1940; three quarters cents for the next five years, and one cent thereafter. Standard Oil Company of Louisiana has a shooting crew in township 19 north, range 3 west, Lincoln Parish.

In Natchitoches Parish, F. W. Martin and Company of Oklahoma City must spud a 6000-foot test on a 13,000-acre block centering around Section 9-10n-6w, near Powhatan, before July 1. In the same parish, centering around Section 31-10n-6w, B. A. Bass and W. D. Simpkins have assembled 4000 acres for a proposed deep test.

Also in Natchitoches Parish, Gayoso Oil Company of Shreveport and Seymour Weiss of New Orleans have sold 1800 acres in the bed of Clear Lake, centering in township 11 north, range 6 west, for $18,000. The new owners will begin a geophysical survey by April 15 with drilling obligation to start by June 15. In the same parish Gulf Oil Corporation has bought 1000 acres in township 13 north, range 7 west, and The Texas Company has bought 1250 acres in townships 12 and 13 north, ranges 6 and 7 west. In township 13 north, range 7 west, Arkansas-Louisiana Gas Company has a shooting crew at work, and Seaboard Oil Corporation is running a profile in township 12 north, ranges 6, 7 and 8 west.

In Grant Parish, J. G. Miller and associates have assembled a 7000-acre block in township 7 north, range 4 west, for a 5500-foot test although shallow horizons around 2400 feet will be their first objective.

In Red River Parish, Flenniken Construction Company of Shreveport has taken from H. D. Conley a block centering in Section 19-13n-9w, with a drilling obligation for a 6100-foot test, location for which will be near a test drilled in that section several months ago by Sterling Oil & Gas Company of Houston, Texas. In this same parish, Gulf Oil Corporation has been doing seismograph work in townships 12 and 13 north, ranges 10 and 11 west.

Having drilled two shallow tests below 1700 feet neither of which was a producer, G. W. Zeigen has now a clear title to 106,000 acres of land, mostly in Winn and Jackson Parishes, which he took from Louisiana Central Lumber Company. This acreage centers around townships 12, 13, 14 and 15 north, ranges 1, 2 and 3 west and ranges 1, 2, 3 and 4 east.

NORTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Rodessa)—		
Ark. La. Gas Co., Rodessa 11, 22-23n-16w	4000	6002
Haynes Prod. Co., Lawton 10, 14-23n-16w	6000	6041
United Gas Pub. Serv. Co., Ardis 5, 14-23n-16w	4000	6009
Thomas 2, 23-23n-16w	8000	6016
I. L. Young 2, 21-23n-16w	6000	5995
Gipson 1, 15-23n-16w	8000	6008
Rodessa 12, 22-23n-16w	5000	6005 *
CADDO PARISH (Pine Island)—		
Hollman et al, Muslow 2, 32-21n-15w	†	2140
CALDWELL PARISH—		
Caldwell Drlg. Co., Luna Gore 2, 30-12n-3e	*	768
CLAIBORNE PARISH—		
Wm. C. McGlothlin, Brinker 1, 10-23n-4w	*	4525
DE SOTO PARISH (Pleasant Hill)—		
J. K. Wadley et al, Logan Oil Co. 2, 16-10n-12w	*	3288
MOREHOUSE PARISH (Monroe)—		
United Gas Pub. Serv. Co., Crossett Lbr. Co. 32, 27-21n-4e	¶5	2155
Crossett Lbr. Co. 34, 27-21n-4e	¶5	2170
OUACHITA PARISH (Monroe)—		
Hope Prod. Co., Cole Heirs 5, 38-19n-3e	¶2	2197
SABINE PARISH (Converse)—		
Monroe Prod. Co., W. T. Boyd 1, 25-9n-14w	35	1771
J. E. Nicholson, Cassell 1, 25-9n-14w.	*	2197
UNION PARISH (Monroe)—		
Farrell & Co., State of La. 12, 9-20n-4e	¶1½	2130
Interstate Nat. Gas Co. Fee 44, 7-20n-4e	¶6½	2144
Southern Carbon Co., Grayling 8, 28-21n-4e	¶12	2125

*Failures; †Junked; ¶Million cu. ft. gas.

Cheneyville Defined

The northern limits of the Cheneyville-Bunkie field in Rapides Parish, central Louisiana, apparently were defined last week when Texas Eagle Oil Company et al's Hogan 1, Section 2-1n-2e, was abandoned at 6005 feet after testing only four joints of mud at 5702-51 feet. This test is two miles north of the three small producers in this field.

DEEP TEST PLANNED
Phillips to drill plug in Ouachita County well

ARKANSAS

WEEKLY STAFF REPORT

El Dorado, Ark.—Phillips Petroleum Company plans in a few days to drill plug in 9⅝-inch casing cemented at 4891 feet (corrected depth) in J. D. Reynolds 1, SE NW 27-15-15, Ouachita County, a contemplated deep test east of the old Smackover field. Depth of the well is 4908 feet, marking the top of the Permian lime.

Casing was cemented after an electrical tester showed satisfactory porosity and resistivity. A gas showing caused the test to be made. Meanwhile Phillips Petroleum Company is paying $200 per acre for leases near the block.

Joe Modisett's Frost Lumber Company, Section 29-19-24, last week was reported drilling at 5220 feet after logging anhydrite from 5096 to 5135 feet. Base of massive anhydrite in the former hole was 5309 feet. The old hole was junked at 5316 feet and derrick skidded over 100 feet.

Two tests in the Urbana field, Union County, are ready for test. They are: Marine Oil Company's Thompson A-9, Section 10-18-13, 7inch casing cemented at 3490 feet, total depth 3536 feet; and McCreslenn Oil Company's Doty Norman 2, Section 3-18-13, 7-inch casing cemented at 3455 feet, total depth 3556 feet.

One new location was announced in Arkansas: Benkarol Oil Company's R. Pumphrey 1, NE NE 11-17-14, Union County, Rainbow City field. In that field Ohio Oil Company's R. Pumphrey 4, NE NW 12-17-14, was completed at 3173 feet pumping 105 barrels of oil daily. J. C. Buckbee, Trustee's Ezzell 1, NE NW 13-17-15, Union County, was junked and abandoned at 3572 feet.

ARKANSAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
UNION COUNTY—		
J. C. Buckbee, Tr, Ezzell 1, 13-17-15	†	3572
Ohio Oil Co., R. Pumphrey 4 12-17-14	105	3173

*Failures; †Junked; ¶Million cu. ft. gas.

Shot going in hole to point near cut.
Ready to drill out after window is shot.
You can sidetrack a lot of trouble and expense while you're sidetracking by this revolutionary method with an H. & L. expert shooting crew!
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INCORPORATED
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GOOSE CREEK, TEXAS, U.S.A.
M. C. WOMACK (Phone 89) Thibodeaux, La.

El Dorado, Ark.—Two drilling permits were issued last week by the Arkansas Board of Conservation, both in Union County as follows: Don R. Keever, El Dorado, Arkansas, A. E. Slaughter 1, 330 feet north and west SEc SE SE 9-17-16; Root Petroleum Company, El Dorado, E. V. White 1, located 660 feet north and west SEc SE SW 36-17-15.

Jackson, Miss.—Mississippi's discovery gas well in the Amory field, Mississippi Development Company's Carter 1, Section 7-13s-17w, Monroe County, completed 10 years ago still is producing 200,000 cubic feet of gas daily, from total depth of 2412 feet. It is probable it will be deepened when it ceases to produce. Talk is also heard of plans to deepen several other holes drilled in the Amory district which preceded discovery of gas at Jackson by 4 years.

Shreveport. — Twenty-three drilling permits were issued last week by the minerals division, Louisiana Conservation Commission, of which ten were for North Louisiana divided among the following parishes: Caddo, eight, of which seven were in Rodessa; Grant, one; and Rapides, one. The 13 in South Louisiana were divided among the following parishes: Acadia, three; Ascension, two; Calcasieu, two; Iberia, four; La Fourche, one; and Livingston, one.

Sandy-Lime Belt

OF NEW MEXICO PROMISES MAJOR DRILLING CAMPAIGN

WEEKLY STAFF REPORT

Hobbs, N. M.—Recognition won by the sandy-lime belt, extending up the east line of Lea County and parallel with the group of fields between Jal and Hobbs that produce from dolomite lime, as a source of oil production since the first of the year now promises to result in a major drilling campaign. Eunice and Monument fields will continue as important drilling centers until production limits are established, with excellent prospects of eventually being linked, but the sandy-lime belt is destined to figure prominently in future operations carried on in the county.

Approaching lease expirations are forcing activity in the sandy-lime belt, as successful completions recorded within the past six months by wildcat and semi-wildcat projects tend to enhance the value of the wide strip. More than a dozen oil wells have been completed in a north and south direction at intervals for a distance of about 24 miles. So far the completions have been void of flush production, and generally require a nitro shot to make the maximum proration allowable. However, operators anticipate finding prolific areas comparable to several fields in Winkler and Ward Counties, Texas, where similar geological conditions prevail.

Spread of the development work in Lea County to untested areas will lead to heavy drilling programs by owners of extensive leases and State and Federal permits. Continental Oil Company and The California Company are credited with having mapped out a program that will involve the drilling of more than 100 additional wells in the near future in matching offsets and protecting short term leases.

10 Locations; 10 Producers

Lea County added 10 new locations the past week, and an equal number of oil producers, which were divided between Eunice and Monument fields.

Four new projects were assigned to the sandy-lime belt, including Ohio Oil Company's W. H. Turner 1, C NE SE 29-21s-37e, a south offset to a 250-barrel wildcat completion recently scored by Barnsdall Oil Company's Hardy 1.

C. & G. Oil Company, headed by Eugene B. Germany, Dallas, has taken a 50 percent interest with The Texas Company in starting a wildcat about four miles southeast of nearest production in the Monument area. The former has moved in its own rotary to drill Ellen Weir 1, C NE NE 14-20s-37e.

Rowan Drilling Company and Barney Cockburn have spudded H. G. Mattern 1, C SE SW 7-22s-37e, and Landreth Production Corporation's E. H. Grizzell 1, C SE SW 5-22s-37e has also commenced operations to forestall lease expiration on its 160-acre tract.

Landreth Production Corporation is making preparations to enter the Eunice field with its first test to be drilled on a State 80-acre lease, C NW NW 22-21s-36e, as a diagonal southeast offset to Tide Water Oil Company's State 4-D, a recent location. Tide Water Oil Company's State 2-D, C SW SE 16-21s-36e, responded to treatment with 2000 gallons of acid in lime at 3825-3900 feet with a flow of 216 barrels of pipe line oil per hour through 15/16-inch choke on tubing and 3-inch valve on casing about 50 percent open. Prior to being acidized the well tested 126 barrels in 12 hours on gas lift. The hole is bottomed at a sub-sea depth of 275 feet.

Shell Petroleum Corporation's State 1E, C Lot 9, 6-21s-36e, is a new location for the northwest portion of the Eunice field, and Gulf Oil Corporation's State-Janda 1-C, C NW SW 15-21s-36e, is on the east flank of production. Peerless Oil & Gas Company, owner of a 40-acre lease surrounded by production, is preparing to drill State 2, located 2300 feet from south and 980 feet from west lines of 29-21s-36e. The company's State 1 pumped only 478 barrels of oil during March in the face of an allowable of 3563 barrels per well for the month. The second test on the unit is the first instance any operator in the field has elected to drill more than one well per unit.

Effective April 1 the proration quota of the Hobbs field was raised from 26,811 barrels to 26,843 barrels daily, but other Lea County areas sharing in the market outlet provided by majors were assigned a flat quota of 112 barrels daily, or one barrel per day less than the allowable given such wells during the March 16-31 period, according to C. G. Staley, proration umpire.

Bottom Hole Water

Bottom hole water appeared unexpectedly in the southeast portion of the main section of the Eunice field last week when Continental Oil Company and California Company's A. M. Lockhart 4-B-28, C SW SW 28-21s-36e, showed water at 3927 feet, or 303 feet sub-sea. The well produced 5 barrels fluid hourly, 14 percent water, on gas lift, and when treated with 1000 gallons of acid produced 65 barrels fluid in 6½ hours. The hole was plugged back to 3900 feet, where it tested 2½ barrels per hour with 15 percent water. The partnership's Lockhart 3-B-28, a north offset, entered the lime pay at 3850 feet, and lost rotary returns at 3900 feet, or 269 feet sub-sea. Completion test at this depth afforded a natural flow of 154 barrels of pipe line oil per hour through open tubing, with gas volume rated at 1,590,000 feet daily.

Fred Turner, Jr., Midland, Texas, and others have moved in equipment to drill State 1-A, NE NW SW 2-20s-36e, situated on the southwest edge of production in the Monument field. Ohio Oil Company's State-Elliott 1, C NW SE 30-19s-37e, was completed at 3945 feet with a natural flow of 356 barrels of oil in 15 hours via one-inch choke on tubing. The company has started State-Elliott 2, located in northeast unit of its 160-acre lease. Repollo Oil Company's B. J. Barber 1, SW SE NE 7-20s-37e, mentioned last week as having extended production in the Monument field to the southeast with a natural flow of 100 barrels oil per hour accompanied by an estimated yield of 100,000,000 cubic feet of gas from lime at 3884 feet, or 324 feet sub-sea, has been completed under choke. A string of 5-inch pipe was cemented at 3821 feet to exclude the excessive gas flow. Company gauge upon completion amounted to 360 barrels oil in six hours through one-inch choke.

Semi-wildcat producer developed late in March by Culberson-Erwin and Stovall's J. R. Stuart-Repollo 1, C SW SE 10-25s-37e, continues to flow by heads from 40 to 50 barrels of high gravity oil daily while attempting to recover tools lost in sandy-lime at 3294 feet. The same operators' J. B. Humphrey-Humble 1, C SE SW 3-25s-37e, was due to reach the oil zone for the area late last week. The Texas Company's W. T. Lanehart 1, C NE 29-25s-37e, encountered 20,000,000 cubic feet of dry gas production at 2570 feet, with an elevation of 3031 feet. Preparations were underway to lubricate off the gas and resume drilling.

Lance Creek Boom

EDGE WELL COMPLETION PROVIDES 30 LOCATIONS

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Thirty or more completions were seen this week for the Lance Creek field, Niobrara County, eastern Wyoming, during 1936, as J. M. Huber Corporation's Jose 1, NE SE NW 6-35n-65w, on the northwest edge of the field pumped 20 barrels of oil and 3 barrels of water in the first 24 hours.

Completion of this well extends the Lance Creek Sundance limits to the 900-foot contour and brings around 2500 acres within proved limits. J. M. Huber Corporation is preparing to pull rods and tubing and drive lead plug with cable tools and recement for water shut off at 4032 feet.

Meanwhile two new wells started drilling in proved limits and announcement of a southwest extension test to the field was made. MacKinnine Oil & Drilling Company has leased the Thompson acreage in the E½W and the W½E½ 7-35n-65w, and location for a test on that lease will be released later by J. M. Huber Corporation which is drilling the well for a 50 percent interest in the lease.

Continental Oil Company is moving in material for Agnes Rohlff 6, CSW SW 32-36n-65w, and Joss 4, CSW NE. This company expects to have completed and in operation by April 15 its gasoline absorption plant at the field and its 4-inch gasoline line from Lance Creek to Manville, Wyoming, railhead 18 miles southwest.

Watched with considerable interest is Ohio Oil Company's Agnes Rohlff 3, SW SE NE 32-36n-65w, northeast extension well, a quarter-mile from the nearest production, which is drilling below 3100 feet and is nearing the Sundance objective. The company's Converse Sheep 5, CSE SE 32-36n-65w, topped the Sundance at 3493 feet and had the sand 15 feet higher than the previous high well, Argo Oil Company's Elliott 4, CNE NW 5-35n-65w, which topped the sand at 3545 feet. There is a difference of 30 feet surface elevation in the wells.

Argo Oil Company's Elliott 6, CSE SW 5-35n-65w, is cementing the 7-inch production casing at 3864 feet, after topping the sand at 3866 feet and going to a total depth of 3904 feet with hole bottomed in the sand. Elliott 7, CNE SW 5-35n-65w, is drilling at 2220 feet.

Central Wyoming Routine

Operations in the fields of central Wyoming, where Ohio Oil Company and The California Company are active, were at routine stages at the close of the week. In the Rock River field, Carbon County, Ohio Oil Company's State 1, SWc NE 34-20n-78w, is drilling out cement with the 4¾-inch liner set at 3220 feet in top of the Sundance sand with hole bottomed at 3290 feet in the formation. Harrison-Cooper 9, SWc 35-20n-78w, is fishing old liner to deepen from 3102 feet in the Lakota to the Sundance, and Alvy Dixon 1, NWc SE 34-20n-78w, is building derrick to deepen from 2934 feet.

On Big Medicine Bow Dome, Carbon County, Ohio Oil Company's Union Pacific-California 2, CNE NE 35-21n-79w, is drilling at 1320 feet with the 12½-inch casing set at 550 feet. Union Pacific-Johnson 3, CNE SE 23-21n-79w, has rig up.

The California Company's Holst 3, NW SW SE 13-17n-77w, Quealy field, Albany County, is redrilling at 3295 feet. Wilson 1, NW SW SW 18-17n-76w, is rigging up rotary equipment to resume from 1010 feet where it drilled with cable tools.

Sidney H. Keoughan and Union Oil Company are preparing to resume drilling in Union Pacific 1, 1800 feet from the east line and 1320 feet from north line of Section 1-18n-78w, deep test to the Sundance sand in the Dutton Creek field, Carbon County. The well has been shut down for the past several weeks because of storms.

Near Completion Northern Wyoming

Taylor Oil Company and Sidney H. Keoughan's Hoskins 1, SE SE 25-56n-97w, southeast extension test to Byron field, Big Horn County, northern Wyoming, is drilling at 5210 feet in new hole and is near the objective, the Embar-Tensleep horizons.

Ohio Oil Company's Byron-Union 4, CSW NE 25-56n-97w, Byron, is cutting tubing which was cemented to bottom on plugging back from 5735 feet where it had water in the bottom of the Tensleep to 5714 feet. The Tensleep was topped at 5710 feet and the Embar drilled at 5587-5710 feet. The company's Robert Till 1, CSE SW 24-56n-97w, is drilling at 1869 feet and Orson Vail 1, CNW NE 23-56n-97w, has rig up.

L. H. Patton, oil and gas well fire fighter of Houston, and crew of the Stock Oil Company's Allen 1, SE NW SE 35-56n-98w, Garland field, Big Horn

MOUNTAIN STATES Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY:		
(Cut Bank Field)—		
Kinchelo-Hanlan, Tweedy 1, sec 25-33n-6w	70	2850
Wilkinson, Tribal 1, ne sw 31-33n-5w	90	2795
TOOLE COUNTY:		
(Kevin-Sunburst)—		
Huso Bros. Davis 1, sw ne se 14-35n-3w	10	1690
NEW MEXICO		
SAN JUAN COUNTY:		
(Kutz Canyon District)—		
Southern Union Gas Co., Government 5, cne ne 14-28n-11w	¶1½	1970
LEA COUNTY (Eunice Field)—		
Conoco & California Co., Lockhart 3-B-28, c nw sw 28-21s-36e	6000	3900
Humble, J. D. Knox 1, c nw se 10-21s-36e	500	3865
Repollo, et al, State 4, nw sw ne 19-21s-36e	3600	3945
Tide Water, State 2-D; c sw se 16-21s-36e	7500	3900
LEA COUNTY (Monument Field)—		
Gulf, B. V. Culp 4, c sw ne 19-19s-37e	1950	3988
B. V. Culp 5, c se ne 19-19s-37e	1000	4000
Ohio Oil Co., State-Elliott 1, c nw se 30-19s-37e	1500	3945
Repollo, B. J. Barber 1, sw se ne 7-20s-37e	2500	3884
The Texas Co., J. R. Phillips 1, nw nw nw 6-20s-37e	5000	3908
State 2-F, c se se 24-19s-36e	1500	4023
COLORADO		
ARCHULETA COUNTY:		
(Price District)—		
Wm. E. Hughes Estate Fee 5, se nw se 24-33n-2e	(no sand record)	

*Failures; †Junked; ¶Million cu. ft. gas.

MONTANA

Cut Bank, Mont.—Two wells, offsets to the Santa Rita Oil & Gas Company's 2000-barrel well in the Sunburst sand, Cut Bank field, are completing this week in the Cut Bank sand after having missed production in the Sunburst sand above. Tribal 6, CNW SW 15-35n-6w, logged the Cut Bank at 2884-2938 feet and 1000 feet of oil in the hole. It is rated for 50 barrels daily. It is an east offset to the flush Sunburst producer.

The Texas Company's Fee 5, CSW SW 15-35n-6w, a southeast offset to Landers 1, swabbed 120 barrels initial. It was drilled to 2900 feet.

Santa Rita Oil & Gas Company's Tribal 7, SW SE NE 16-35n-6w, a north offset to the Landers well, is drilling at 2260 feet.

One new well started in the Glacier County field this week: Wilkerson et al's Tribal 1-A, NE NE 1-32n-6w, moving in material.

Wm. M. Fulton's Price 1, SW NE NE 18-27n-4w, Pondera field, Pondera County, northern Montana, is fishing tools with total depth at 1710 feet.

Daniels Petroleum Company's May 1, CSE SE 13-1s-33e, Hardin gas field, Big Horn County, southern Montana, is drilling the Chugwater formation at 3116 feet.

One well was abandoned and one well is drilling in the Cat Creek field, Petroleum County this week. H. H. Schwartz's Fee 7, NE SW SW 11-15n-17e, is plugged and abandoned at 1545 feet. West Dome Oil Company's Fee 1, SW SE NE 9-15n-29e, cased off a 4 to 5 barrel show of oil at 1240-88 feet in the First Cat Creek sand with 5⅝-inch string set at 1290 feet and is drilling ahead for the second Cat Creek.

County, are again pumping water in crevice wells nearby to cave hole in Allen 1 and shut off gas flow of 60,000,000 cubic feet which has been burning for the past three weeks. Gas blew out from the Embar-Tensleep formations at 3815 feet when operator ran oil to loosen drill stem frozen on bottom at 3838 feet, and was forced to open blow-out preventor January 19 to avoid cratering of well as the gas began escaping through crevice wells.

Joan Oil Company's Howell 1, NE NW NE 32-55n-97w, Garland field, is resuming drilling at 1190 feet. Henry R. Harriman is cleaning out junk in hole at 908 feet with total depth at 2512 feet in Government 1, NW NE SE 10-56n-98w, and Peter Evanoff is cleaning out cave in McAllister 1, NW NE SE 3-55n-97w, with total depth at 2350 feet, Garland anticline.

Stanolind Oil & Gas Company's Ridgely 20, SE NE 19-46n-98w, Grass Creek field, Hot Springs County, northern Wyoming, is waiting on cement to set around the 5⅝-inch production casing at 3913 feet. Hole bottoms at 3931 feet in the Embar lime, topped at 3908 feet. The well will be carried into the Tensleep and completed in both horizons.

Resume at Aspen

Bridger Basin Oil Company, formerly Pacific Oil Company, has resumed drilling in Well 1-B, NW NW SW 10-14n-118w, Aspen field, Uinta County, southwestern Wyoming. The test has been shut down for the past several months at 1000 feet.

Venice Extension

SHOWING IN WELL ADDS MUCH PROSPECTIVE AREA

CALIFORNIA

WEEKLY STAFF REPORT

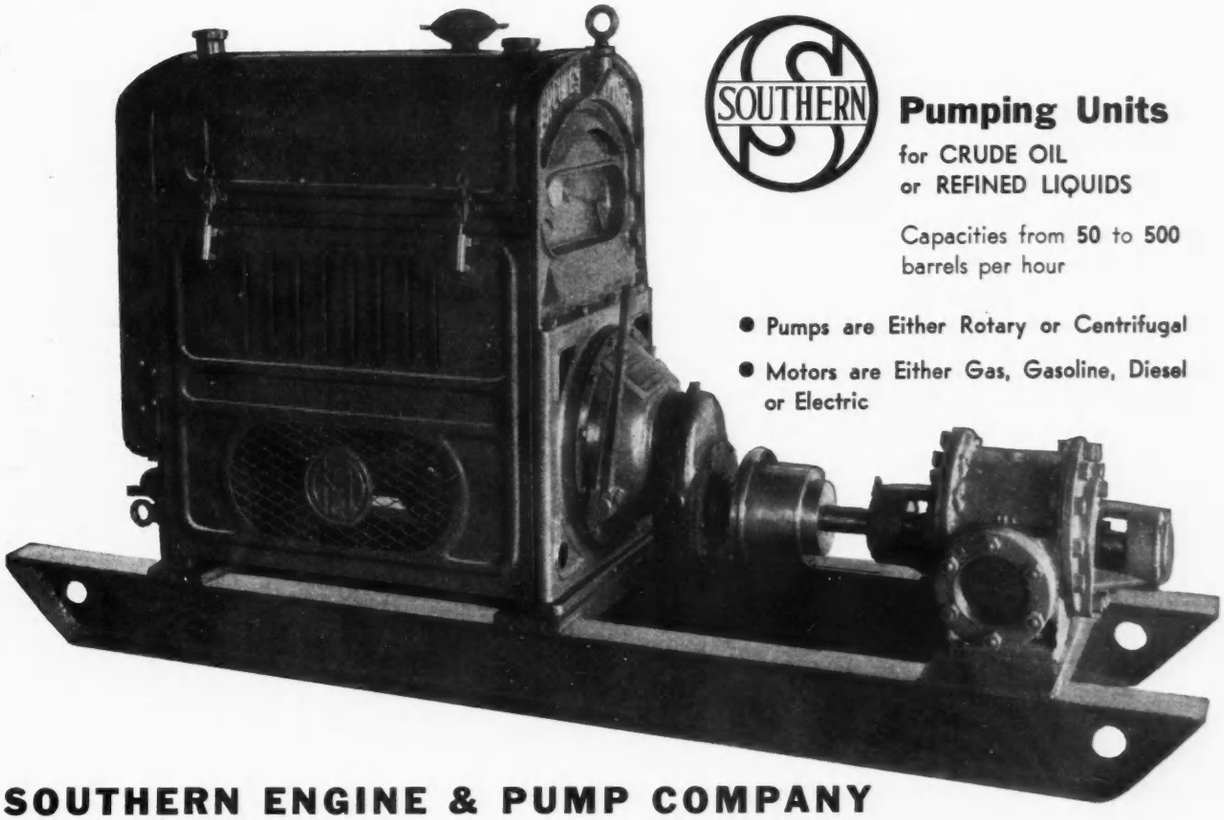
Los Angeles.—Ohio Oil Company's Recreation Gun Club 18, Section 22-2s-15w, eastern extension test in the Venice field, is running formation tester to establish the value of the conglomeratic oil sand encountered at 6305 feet. A successful completion of this venture will add considerably to the proven acreage.

20th Century Oil Company's Calnan 1, Section 36-5s-11w, northern extension test to the Huntington Beach field, was placed on the pump April 2, and is credited with 120 barrels a day of 22.0 gravity oil, cutting 10.0 percent. The project was drilled to 5160 feet, plugged to 4500 feet and 6⅝-inch casing cemented at 4450 feet.

Drilling activity already has started as a result of this company's completion. Rebenstein et al is building a rig in the NEc SW 36-5s-11w.

The Dumas-Lewis Oil Company's Redondo Improvement 1, discovery well of the new Redondo Beach field, produced a total of 8816 barrels of oil from March 7 to 31, inclusive, a daily average of 389 barrels a day of 18.2 gravity oil, cutting 2.0 percent. The well was completed March 3, at 3735 feet, with 8⅝-inch casing cemented at 3185 feet, and was the forerunner for the present active townlot campaign, which is now in progress.

Eyer Petroleum Corporation's No. 1, wildcat test in Section 20-4s-13w, east of the Torrance field, is now making preparations to place on the pump. The well is bottomed at 3794 feet, with



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8⅝-inch casing cemented at 3608 feet and 250 feet of seven-inch liner, including 180 feet of perforated, is landed at 3794 feet. The well has made a few short flows during the time it has taken the crew to condition the well for pumping.

In Santa Barbara County, one mile southeast of the town of Santa Maria, Union Oil Company completed Adam 1, Section 24-10n-34w, for an estimated flow of 4000 barrels a day of 15.0 gravity oil. The well was drilled to 2576 feet, with 8⅝-inch casing cemented at 2026 feet and 581 feet of 6⅝-inch liner, including 536 feet of perforations, was hung at 2566 feet. Insufficient storage facilities prevented the company from producing the well for any extended period; however, several snap gauges taken credited the well at a 4000 barrels a day rate, or better, of 15.0 gravity oil, cutting 0.5 percent.

Immediate drilling will commence on Union Oil Company's California Coast 16, located in the NWc 26-9n-34w. Adam 1 is 1800 feet east of the company's Moretti 1, completed June 2, 1934, for 50 barrels a day. Judging from previous drilling in this area, the structure will be comparatively narrow, extending in a north-south trend from the Adam well, probably including the town of Santa Maria. Acreage is closely held, Union Oil Company having what is now regarded as most of the desirable leases.

Section 24 and contiguous territory has been the object for an intensive search for oil for many years. Wildcats, within one quarter of a mile, have been drilled. Practically all these wells encountered formations showing oil, but none were successful in developing commercial production.

The district of Santa Maria is old in the annals of the California petroleum industry. Union Oil Company discovered the Orcutt field, situated ten miles south of the town, in the early part of this century. The fields of Cat Canyon, Gato Ridge, La Puuisima, Arroyo Grande and Casmalia also surround this interesting borough.

Union Oil Company has abandoned Sudden 1, important wildcat test of the Point Conception district, Santa Barbara County, after drilling it to 1562 feet. Immediate plans for its second well are indefinite at the present time.

The southern extension of the Mount Poso field, Kern County, is slowly being developed by Vanguard Oil Company, the discoverer of this structure and up to now its only active operator. Vanguard has three wells in this area, capable of from 150 to 500 barrels a day. This production comes from 1800 feet of hole, found in the lower Miocene section. The company's Baker 4 has apparently established the northern limits of this accumulation. It was drilled to 1703 feet, found to be unfavorably located structurally, plugged back to the surface, and the well is now being redrilled in an effort to finish the hole on the productive side of the fault.

Union Oil Company has just entered this area. A rig has been erected south and east of the Vanguard's property in Section 34-27s-28e.

The northern extension of the Mount View field of Kern County receives renewed impetus with the starting of Standard Oil Company's second test, known as California Lands Incorporated 1, SEc 13-30s-28e. The company is abandoning Garcia 1, in Section 13-30s-28e, after attaining a depth of 6078 feet. Minor showings of oil were encountered at 4850 feet.

An outside eastern test of the northwest area of the Mount View field may soon prove the presence of oil beyond present known closures. Allied Petroleum Company's Allied 18 has been drilled to 5158 feet, having bottomed in the Santa Margarita and found it to be predominantly gray sand. The hole has been plugged to 4955 feet, to the upper Chanac sand, and preparations are being made to set casing about 4925 feet.

Gas sands will be tested that have been encountered in Doyle-McKeon 1, wildcat test being drilled by General Petroleum Corporation. Located in Section 5-30s-24w, approximately five miles north of the Elk Hills field, the well has been drilled to 6149 feet and 7-inch casing is now standing cemented at 6050 feet.

In the Los Banos area of Merced County, Amerada Petroleum Corporation is acquiring leases in portions of Sections 17 to 36, inclusive, Township 10s, Range 11e. These leases fall directly south of the town of Los Banos and approximately one mile northwest of the abandoned holes of Russ Oil Syndicate's well, Section 28-12s-11e, 5115 feet deep, and the Bergman Oil Company's test, Section 12-12s-11e, drilled to 6006 feet. Pure Oil Company's Chowchilla and Security gas leases lie approximately twenty miles to the east. Amerada Petroleum Corporation has no immediate plans for drilling in this district, as these leases are of ten years duration and are being taken primarily for geophysical investigation.

Amerada Petroleum Corporation has also acquired several thousand acres in the Rio Vista area, in Solano County, for the development of possible gas structures. The company's first location falls in Section 26-4n-2e, approximately thirty miles northwest of the city of Stockton, and will be drilled immediately.

CALIFORNIA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
EDISON—		
Baur Oil Co., No. 2	150	3194
A. T. Jergins Trust, Hershey 12	300	1812
KERN FRONT—		
C. C. M. O. Co., No. 58	135	2180
MIDWAY-SUNSET—		
General, Moco 35-77	40	2305
Petroleum Dr. & Explor., Fried 2	75	2381
MOUNTAIN VIEW—		
Standard, Wilson 3	585	5298
Woods-Callahan Oil Co., Wells 2	385	6045
PREMIER—		
Standard, No. 5-10	85	2710
ROUND MOUNTAIN—		
Honolulu Oil Corp., No. 20-B	220	1950
HUNTINGTON BEACH—		
W. K. Co., No. 5	145	4098
D. A. West, Utacal 1	30	2845
LONG BEACH—		
Big Four Oil Co., No. 2	100	4725
R. R. Bush Oil Co., Ideal 2	75	4725
Shell, Cherry Hill 12	285	4764
SANTA FE SPRINGS—		
Texas Co., Steinly 2	115	4576
Union, Farwell 7	195	4501
General, No. 89-A	*	4650

*Failures; †Junked; ¶Million cu. ft. gas.

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TWO EXTENSIONS
Further testing will determine value of strikes

WEEKLY STAFF REPORT

Mt. Pleasant, Mich.—Two old field extensions were indicated during the week and a wildcat test in Monroe County (Southeastern Michigan) showed commercial production the first 48 hours after being shot in the Trenton lime formation. How important either of the three developments are remains for additional testing.

McClanahan Oil Company's Honderich 1, 10n-5w-nw nw nw-1, Montcalm County, a half-mile east of the previously developed east flank of the Crystal-Ferris pool, flowed 200 barrels the first day against back pressure of 300 to 450 pounds from Dundee lime at 3187 feet. The test was drilled on a farm-out 20 acres from the Rowmor Oil Corporation. It will cause 4 immediate offsets and may lead to 12 or more locations this spring. A mile due east of Honderich 1, Mammoth Petroleum Corporation drilled a dry Dundee test last summer, Graham 1.

Sun Oil Company's Reed 1, 17n-2w-12, Gladwin County, a three quarter-mile extension southeast, showed 1000 feet of oil when drilled to 3890 feet and was shut down for storage. It is showing in Dundee lime. Great Lakes Oil Company's Campbell 1, 17n-2w-3, a half-mile northeast of the Beaverton pool, was put on the pump April 7 for testing after flowing about 50 to 70 barrels each day on a 3-day swab test.

Monroe Wildcat

A. V. Oil Company's Roe 1, 6s-6e-19, Monroe County, was shot on April 5 with 200 quarts of nitro at 2161 feet (Trenton top 2111?) to a 200-foot oil show and estimated 50,000 cubic feet of gas. Test averaged 10 barrels an hour the first 6 hours and produced approximately 130 barrels of 42 gravity oil the first 24 hours after the shot.

This was the most important showing made in the Deerfield area since it was first tested as early as 1888. A crevice condition of the Trenton lime is suspected. How important the well is seemed a question among most operators familiar with the area.

The Deerfield area has produced in the neighborhood of 5000 barrels of oil over a period since 1890. It has been explored at different intervals namely, 1888-1900, 1925-27, and 1929-31, and again at the present. At least three, all in the same section as the Roe 1, wells are being pumped 5 to 10 barrels a week. Others have been produced and then abandoned.

The Dundee lime outcrops only a few miles from Deerfield, and the Trenton lime which lays at about 6000 feet in Central Michigan is found in the 2000-2500 range in the Lenawee-Monroe County area. The glacial drift ranges 100 feet and less. Most of the wells have been drilled with machines. Sea elevation ranges between 600 and 700 feet.

Six miles north of A. V. Oil Company's Roe test, Socony-Vacuum Oil Company has brought fishing experts in from Oklahoma in effort to clean up a collapsed casing on McCarberry 1, 5s-5e-36, Lenawee County, which was shot into production in the Trenton at 2552 feet 2 months ago after which casing collapsed.

MICHIGAN
Completions

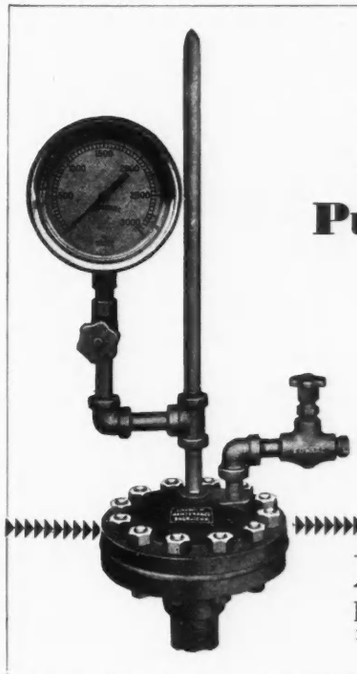
Company, Well and Location	Init. Prod. Bbls.	Depth
GLADWIN COUNTY—		
Great Lakes Oil Co., Campbell 1, 17n-2w-se se ne-3	65	3904
ISABELLA COUNTY—		
Chartiers Oil Co., Mummy 1, 14n-3w, ne ne nw-3	80	3618
MISSAUKEE COUNTY—		
M. J. Ingold, Donley 1, 22n-8w, ne ne ne-31	*	830
MECOSTA COUNTY—		
Hyatt & Norton, Garner 1, 13n-7w, c nw sw-33	¶23	1302
MIDLAND COUNTY—		
Pure Oil Co., Naramore 22, 13n-1w, s½ n½ sw-15	50	3435
Gordon Oil Co., Muscott 6, 13n-1w-ne ne ne-17	25	3423
MONTCALM COUNTY—		
McClanahan Oil Co., Lamphier 1, 10n-5w, nw nw nw-1	200	3187
TUSCOLA COUNTY—		
Smith Pet. Co., McComb 1, 10n-8e-nw sw se-31	*	400
Bancroft Oil Co., Humes 1, 11n-8e-ne ne ne-21	*	2760

EASTERN FIELDS
Completions

EASTERN FIELDS — WEEKLY STAFF REPORT

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
WAYNE COUNTY—		
Ohio F. G. Co., Finley 1	¶	3037
CUYHOGA COUNTY—		
C. A. McMillan, Fuhmeyer-Geisendorf 1	*	....
LORAIN COUNTY—		
Dempsey & Cushing, Cleveland Stone Co. 1	¶	2525
Schneider & Wyles, Williams 1	¶	2501
Featherstone 1	¶	2508
William Dempsey, Palmer 1	*	2634
HOLMES COUNTY—		
Ohio F. G. Co., Alexander 1	*	3457
O. K. O. & G. Co., Essig 71	*	380
COSHOCTON COUNTY—		
Murphy & Co., Myers & Mossholder 2	¶	3083
Graham Bros., Jones 2	*	875
HARRISON COUNTY—		
Pfeiffer, Green 1	*	....
STARK COUNTY—		
Wiser Oil Co., Ralph Shaffer & Co. 1	*	....
FAIRFIELD COUNTY—		
City Nat. Gas Works, Fisher 2	¶	....
PERRY COUNTY—		
Ohio Fuel Gas Co., Snider 2	*	3041
HOCKING COUNTY—		
Hope Constr. & Refg., Dunlap 8	5	3611
BELMONT COUNTY—		
A. J. West & Co., Perkins 1	*	1522
Wood 1	¶	1245
Bishop & Patton, Hurst 4	3	159
ATHENS COUNTY—		
Ohio F. G. Co., Sunday Creek 6083	*	....
F. M. Kinney 1	¶	1106
MEDINA COUNTY—		
Litchfield O. & D. Co., Hepler 1	3	....
Hepler 2	1	....
E. R. Edson & Son Co., Miller 71	*	....
O. K. Oil & G. Co., Essig 74	*	....
MEIGS COUNTY—		
Ohio F. G. Co., F. A. Bryant 1	¶	1106
A. N. Bengel, Williaman 1	*	2119
STARK COUNTY—		
East Ohio Gas Co., F. & E. Kiko 1	¶	3641
KNOX COUNTY—		
D. C. Highman & Co., Ulrey 1	*	....
MUSKINGUM COUNTY—		
Mid-East Gas Co., Elson 1	¶	....
Hopewell O. & G. Co., Carroll 1	10	....
MONROE COUNTY—		
John Lumbattis & Co., Robinson 1	2	1922
GUERNSEY COUNTY—		
Wm. Larrick & Co., Quillan 6	¶	3490
WEST VIRGINIA		
BOONE COUNTY—		
Owens-Illinois Glass, Little Coal 3	¶	....
Little Coal 4	¶	....
CABELL COUNTY—		
West Va. Gas Co., Savage 1	¶	....
CALHOUN COUNTY—		
Virginia G. & O. Corp., Brown-Swan & Co. 32	2	1990
Brown-Swan & Co. 33	4	2035
KANAWHA COUNTY—		
Columbia Carbon Co., Copenhaver 4	¶	....
H. C. Zogg & Co., Dunn 1	¶	....
Godfrey L. Cabot, Inc., N. B. Tompkins 10	¶	5097
RITCHIE COUNTY—		
H. N. Rinehart, Grant Rinehart 8	1	....
R. C. Jackson, Grant Lanhan 2	2	....
F. E. Britchaw, Bradfords 1	1	....
Smith & Hendershot, U. G. Bonnett 1	¶	2725
RALEIGH COUNTY—		
G. L. Cabot, Inc., Beaver Coal Co. 10	¶	....
CABELL COUNTY—		
Kentucky-W. Va. Gas., R. N. Heath 1	¶	2969
BOONE COUNTY—		
United F. G. Co., Horse Creek Coal 45	¶	....
Owens-Illinois Glass Co., Little Coal Land Co. 14	¶	2375
J. G. Roberts 3	¶	2130
H. C. Ballard 3	¶	2000
Pure Oil Co., Federal Coal Co. 80	¶	1078
L. R. & Tract B. & C. 41	¶	2888
INDIANA		
KNOX COUNTY—		
Phillips Pet. Co., Bond 6	*	....
PERRY COUNTY—		
Staves Drilling Co., Herr 1	*	671
VANDERBURG COUNTY—		
L. R. Henley & Co., Ziss 2	60	....
PIKE COUNTY—		
Midwest Dev. Corp., Schrolucke 2	¶	718
Dilley & Miller, Morrison Hrs. 2	*	....
SPENCER COUNTY—		
Petrol. Exploration Co., Nick Gasse & Co. 1	*	566

*Failures; †Junked; ¶Million cu. ft. gas.



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MUD LINE GAUGE
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This unit actually eliminates the turbulent pulsation which takes place in Mud Line Service. The extensive use for the past several years, plus the fact that at this time only a few drilling rigs operate without this dampner, proves the advantages of the "MECO" unit.

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HOUSTON, TEXAS

THE OIL WEEKLY REPORT ON IMPORTANT *Wildcat Tests*

ALABAMA

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 1, nw sw 9-3n-29e, dr 2080 ft.

ARKANSAS

CALHOUN COUNTY—Ben Barnett's Freeman Smith 1, se nw sw 36-15-14, woc 16-in csg 60 ft (5000 ft test).

COLUMBIA COUNTY — J. C. Buckbee, Tr.'s J. B. Wilson 1, sw ne 17-17-18, dk.

CRAWFORD COUNTY — Trumbo et al's Craddock 1, c nw ne 3-11-30, dr 400 ft.

DALLAS COUNTY—Kel-Mac Land & Roy. Co.'s Owen 2, nw sw 28-10-16, spd 10-in csg 42 ft, dr 865 ft.

HEMPSTEAD COUNTY—Dixie Drlg. Co.'s Vada Wheatley 1, nw sw 14-11-26, spd and sd cur titles. Geo. L. Glass' May B. O'Brien 1, ne sw 32-12s-32w, ru and sd. Easton & May's Conway 1, ne sw 20-12s-27w, 12½ in csg 80 ft. F. W. Martin's & M. D. K. Fitzwater's Lafferty 2, se nw 17-14-24, 7-in csg 1980 ft, bailed sw 1986 ft, coring 2010 ft.

LA FAYETTE COUNTY—Erwin & Leach's Bodcaw 3, nw nw 20-16-23, elev 250 ft, cemtd 9⅝ in csg 5063 ft, woc, td 5534 ft. Joe Modisett et al's Frost Lbr. Co. 1, 29-19-24, elev 261 ft, massive anhydrite 5096-5135 ft, dr 5220 ft.

MILLER COUNTY—Odell Hinson's Montana Realty Co. 1, ne nw nw 3-17-28, woc 12½ in csg 238 ft. J. W. Jones et al's Bush 1, ne ne 2-19-27, mim. C. V. Lenz's Dale 6, 24-16-26, sd 575 ft.

OUACHITA COUNTY—Phillips Pet. Co.'s J. D. Reynolds 1, se nw 27-15-15, 13⅜ in csg 619 ft, elev 155 ft, top Permian 4904 ft, cemented 9⅝ in csg 4891 ft (corrected depth, td 4891 ft, td 4908 ft (corrected depth).

UNION COUNTY—J. C. Buckbee, Tr.'s Ezzell 1, ne nw 13-17-15, elev 255 ft, junked aband, td 3572 ft. Mrs. Mamie McCurry et al's Slaughter 1, se se 9-17-16, 12½ in csg 141 ft, dr 1825 ft. Root Pet. Co.'s White 1, se sw 36-17-15, elev 257 ft, top Nacatosh 2141 ft, coring 2510 ft.

CALIFORNIA

FRESNO COUNTY

COALINGA—Jas. M. Conlon Co.'s No. 1, 30-19-15, td 889 ft, pulled liner, to deepen.

MONOCLINE RIDGE—Seaboard Oil Corp.'s Welsh 1, 10-16-13, dr sand and shale 2455 ft.

CURRY MOUNTAIN—Standard Oil Co.'s East Coalinga 1, 36-21-14, rig.

CANTUA—Western Gulf Oil Co.'s S. P. Land 3, 3-17-15, foundations.

KERN COUNTY

DELANO—John W. Alford's Quinn 1, 14-25-27, td 2399 ft, co.

MARICOPA—So. American Pacific Oil Co.'s No. 1, 18-10-23, rur.

McKITTRICK—Belmac Dr. Co.'s Douglas 1, 22-29-21, td 4800 ft, fsh.

McVAN—Framac Oil Co.'s Brown 2, 22-27-27, td 1413 ft, landed 47 ft 6⅝-in liner, 27 ft perforated to test. Santa Anita Oil Co.'s Good Hope 1, 11-27-27, dr shale 420 ft.

SOUTH BUTTONWILLOW—General Pet. Corp.'s No. 1, 5-30-24, td 6149 ft, wocs 7-in at 6050 ft.

NORTH MOUNT POSO—H. Mann's No. 2, 27-26-28, td 1537 ft, fsh. Santa Carla Oil Co.'s Glide 1, 7-26-28, td 1627 ft, co.

BUENA VISTA—Ohio Oil Co.'s No. A-6, 32-31-26, dr shale 3100 ft; No. D-1, 1-30-25, dr sand and shale 4301 ft. Superior Oil Co.'s B. V. A. 1, 6-32-25, dr sandy shale 4836 ft.

MOUNT POSO—Poso Pet. Co.'s No. 1, 2-27-27, dr gray sand 1231 ft.

GRAPEVINE—Reserve Oil & Gas Co.'s No. 1, 33-11-10, td 6030 ft, plug 4805 ft, 93 ft perforated, 5-in liner at 4805 ft, water showing some gas; Tejon Ranch 1, 2-10-19, td 3708 ft, recemented.

STEVENS AREA—Shell Oil Co.'s K. C. L. 1, 29-30-26, dr shale and sand 7634 ft.

WHEELER RIDGE—Silver Gate Co.'s Tejon 1, 7-10-19, td 2985 ft, redr at 2880 ft, gray sand.

LOST HILLS—Standard Oil Co.'s United 1, 2-26-20, td 6314 ft, redr at 5905 ft.

COMANCHE POINT—Tejon Ridge Oil Co.'s No. 1, 23-32-29, co, td 2226 ft.

McFARLAND AREA—Woods & Bailey's No. 1, 16-26-26, dr sand and shale 3367 ft.

KINGS COUNTY

PYRAMID HILLS—Associated Oil Co.'s Avenal 1, 35-23-17, foundation.

TULARE LAKE—Hancock-Union Oil Co.'s Giannini 1, 28-22-20, dr shale and sand 4370 ft. Kettleman View Oil & Gas Corp.'s No. 1, 29-22-19, sd 1620 ft.

SAN JOAQUIN COUNTY

TRACEY—Amerada Pet. Corp.'s F. D. L. 5, 15-2-5, dr shale 5564 ft. Standard Oil Co.'s McDonald 1, 25-2-4, dr sand and shale 3500 ft.

SAN LUIS OBISPO COUNTY

CARRIZO SPRINGS—Barnsdall Oil Co.'s Wreden 1, 24-28-17, material.

ARROYO GRANDE—Pismo Pet. Co.'s Scott 1, dr sand 1200 ft. Birch-Royer Oil Co.'s Patchett 1, 33-31-13, sd 1625 ft.

PASO ROBLES—Geo. Moss' Paso Robles 1, 27-26-13, rig.

CARRIZO PLAINS—J. C. Theriot's Holland 1, 22-32-22, td 1906 ft, co.

ELKHORN—United Oil Co.'s No. 1, 2-32-21, sd 150 ft.

CHOLAME—Willett Oil Assn.'s Jack 2, 10-25-15, sd 3647 ft.

MISCELLANEOUS

HUMBOLDT COUNTY—The Texas Co.'s Eureka 2, 22-3-11, dr sand and shale 4126 ft.

SOLANO COUNTY—Amerada Pet. Corp.'s Emigh 1, 26-4-2, lcn.

TEHAMA COUNTY — Northern Counties Pet. Co.'s Ewers-Mooney 1, 25-24-3, td 7010 ft, rep equip.

MONTERREY COUNTY—Shell Oil Co.'s Branch 1, 34-24-10, dr sand and shale 7652 ft.

SANTA BARBARA COUNTY

SUMMERLAND — Carnero & Dietzman's Fithian 1, 8-4-25, dr shale 450 ft.

LOMPOC—Lompoc Pet. Co.'s Beauterbaugh 2, 18-7-34, td 3940 ft, fsh. York Oil Co.'s No. 3, 33-8-34, foundation.

CARPENTERIA—Santa Barbara Oil & Gas Co.'s Bryce 1, 29-4-25, td 3000 ft, standing replugged.

SANTA MARIA—Union Oil Co.'s Adam 1, 24-10-34, td 2575 ft, 8⅝-in at 2026 ft, 581 ft of 6⅝-in liner including 536 ft perforated, run to 2566 ft, 2½-in tubing to 2478 ft, started flowing April 1 at 3500 bbl rate, 15.4 gravity clean, to test of potential; Cal Coast 16, 26-9-34, lcn.

POINT CONCEPTION—Union Oil Co.'s Sudden 1, 10-5-25, td 1562 ft, gray sand and shale, to be aban.

VENTURA COUNTY

SHIELLS CANYON—Bankline Oil Co.'s Calumet B-1, 3-3-19, td 4074 ft, plug 3629 ft, redr at 3668 ft; Wakefield 1, 36-5-20, dr red shale 2354 ft. The Texas Co.'s Shiells 129, 4-3-19, dr red shale and sand 4559 ft. Petroleum Securities Co.'s Home R. 3, 3-3-19, dr gray sand 200 ft.

BARDSDALE—Bestco Pet. Co.'s Frey 1, 2-3-19, td 360 ft, wocs 13⅜ at 331 ft. Duke Oil Corp.'s No. 1, 7-3-19, dr shale 3461 ft. El Rancho Oil Co.'s Elkins 1, 9-3-19, td 4041 ft, swabbed muddy water, to pull tubing. Union Oil Co.'s Dryden 10, 12-3-20, dr oil sand 5972 ft.

PIRU—Bolsa Chica Oil Corp.'s Snow 3, 4-4-18, dr shale 962 ft.

SOUTH MOUNTAIN—Calco Pet. Corp.'s Calco 3, 17-3-20, dr shale and oil sand 2870 ft.

OJAI—Continental Oil Co.'s Piru 2, 12-4-23, testing on pump 1017 ft.

OXNARD—General Pet. Corp.'s McGrath 2, 26-2-23, dr sand and shale 5089 ft.

SANTA PAULA — High Mesa Oil Co.'s Butcher 1, 16-4-22, td 650 ft, co.

SESPE CANYON—Merchants Pet. Co.'s No. 1, 1-4-20, grade.

SESPE CREEK—Speik Oil Co.'s No. 1, 33-5-19, lcn. Topo Topo Oil Co.'s 33-5-19, dr shale 1200 ft.

SOUTHERN CALIFORNIA

PUENTE—Chas. R. Butler's Butler 1, 14-2-10, td 4080 ft, to run formation tester.

NORTH LONG BEACH—Geo. L. Clayton's No. 1, 31-3-12, sd 6765 ft.

TORRANCE—Codri Oil Co.'s No. 1, 28-4-13, td 850 ft, wocs 13⅜-in on bottom. Eyer Pet. Corp.'s No. 1, 20-4-13, td 3794 ft, run 7-in liner including 180 ft perforated to 3794 ft, flowed oil and water, now on pumping test.

ARTESIA—Davis & Lewis' No. 1, 25-3-12, rig.

WILMINGTON—Harbor Dr. Co.'s No. 1, 33-4-13, lcn.

TOPANGA CANYON—Monarch Pet. Co.'s Sylvia Park 1, 5-1-16, td 650 ft, co.

WEST LONG BEACH — Shell Oil Co.'s Amebco 1, 13-4-13, td 6035 ft, redr 5697 ft.

EL NIDO—Shell Oil Co.'s McKenna 1, 33-3-14, dr shale and sand 6940 ft.

LAWNDALE—Sovereign Oil Corp.'s Ben Long 1, 22-3-14, sd 8766 ft.

WILMINGTON—Sovereign Oil Corp.'s Banning 1, 28-4-13, dr shale 3060 ft.

ARTESIA—Vanco Dev. Co.'s Millard 1, 25-3-12, td 5888 ft, plug above 5130 ft, to test by stages.

DOMINGUEZ—West American Oil Co.'s Del Amo 1, 3-4-13, dr shale 7709 ft.

NEWHALL—Yant Pet. Co.'s No. 5, 1-3-16, dr shale 1892 ft; No. 6, 1-3-16, rig.

NEWPORT—Commander Oil Co.'s Mesa 1, 29-6-10, td 1100 ft, pulling 8¼-in, rur to dr deeper.

YORBA LINDA—Continental Oil Co.'s Carlton Com. 1, 21-3-9, dr sand and shale 4401 ft.

WESTMINSTER—Hillman-Long's No. 1, 14-5-11, dr sandy shale 5959 ft.

KRAEMER—Standard Oil Co.'s Yorba Com. 1, 36-3-9, td 2714 ft, pumping 6 bbls, 17.5 gravity, cut 45 percent.

RIVERSIDE COUNTY—Albert Pet. Co.'s Watt 2, 23-7-3, sd 2787 ft. Fred E. Stevens' Everett 1, 27-3-7, rigged up and idle.

SAN BERNARDINO COUNTY—Equitable Pet. Explor. Co.'s No. 1, 11-10-5, sd 2252 ft.

COLORADO

ADAMS COUNTY—Hills Dome Oil Lease, Hills 1, csl se se 27-3s-64w, dr plugs after recementing caves at 4145 ft. Riddle Petroleum Co., Edwards 1, sw sw sw 15-3s-66w, moving in light rotary.

ARCHULETA COUNTY—Wm. E. Hughes Estate Fee 4, se nw ne 24-32n-2e, waiting on

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
b.s.—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg.—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so & g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

csg. K. L. Kendrick, Crowley 1, 2-32n-1e, dr 937 ft. Carl D. Lindstrom, Crowley 1, se se se 3-32s-2e, mim.

JEFFERSON COUNTY — Ruby Hill Oil Co., Braden 1, se se 24-4s-69w, sd 4415 ft.

LINCOLN COUNTY—Consolidated Smelting and Metals Corporation Hancock 1, ne sw 7-17s-52w, sd 1780 ft.

MORGAN COUNTY—Swisher et al Lunt 1, sw sw sw 3-5n-60w, dr 1410 ft.

PARK COUNTY—South Park Oil Co., State 1, se se sw 16-11s-17w, dr 4135 ft.

FLORIDA

JACKSON COUNTY — Mrs. Mamie Hammonds et al's Grandberry 1, sw ne 15-5n-9w, sd 240 ft.

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 1, se se 17-24s-25e, elev 120 ft, dr 3256 ft lime.

KANSAS

BARTON COUNTY—Morgan & Flynn et al's Zimmer 1, se se sw 30-19s-14w, dr 2920 ft. Hilligoss et al's Schmidt 1, ne ne ne 27-19s-11w, dr 3220 ft. Simpson, Noble & Atlantic's Niss 1, cnw ne 31-20s-13w, dr 1798 ft. Murphy & Morgan's Robinson 1, ne ne sw 21-16s-14w, co 2525 ft. Hinkle's Smith 1, sw nw nw 1-17s-11w, dr 2555 ft. Merriam's Soaken 1, sw sw se 21-17s-11w, dr 895 ft. Davison et al's Birzer 1, sw se sw 22-17s-12w, rig. Ramsey et al's Hunt 1, nw nw nw 10-18s-11w, dr 2855 ft. Schermerhorn Oil Co.'s Hunter 1, ne ne ne 29-18s-15w, sd 380 ft. Buchanan & Alexander's Langford 1, ne ne sw 14-20s-11w, sd 2270 ft. Wakefield & Johnson's Bumm 1, sw ne ne 22-19s-12w, sd 135 ft.

BUTLER COUNTY—Ellis et al's Pettit 1-A, se se nw 21-28s-6e, lcn.

COWLEY COUNTY—Penwest's Clover 1, ne se se 8-31s-7e, td 3172 ft, pb 2260 ft. Shawver et al's Wilson 1, ne se ne 11-30s-4e, td 2890 ft, D & A. Roth & Faurot's Guthrie 1, se ne nw 30-33s-8e, dr 2815 ft. Mead Bros. et al's Orr 1, se se sw 23-31s-4e, dr 2150 ft. Shawver & Wilt's Baruth 1, sw nw ne 8-34s-3e, td 3305 ft, potential 125 bbls, comp. Mickleson et al's Wallace 1, sw se se 10-33s-4e, spd. Wakefield's Wilson 1, nw nw nw 4-32s-3e, dr 2680 ft. De Genther Oil Co.'s Holt 1, nw nw se 15-30s-5e, mim.

EDWARDS COUNTY — Stanolind Elwell's Donovan 1, cse se 14-26s-18w, lcn.

ELLIS COUNTY—Jones Bros. & Carpenter et al's Solomon 1, se se sw 28-11s-19w, dr 777 ft. Twin Drlg. Co.'s Reidel 1, sw sw ne 27-13s-16w, td 3184 ft, rust. Brunson & Ewers-Simpson's Gross 1, ne ne sw 29-14s-17w, running 7-in csg 767 ft. Bridgeport Mach. & J. J. Hall's Madden Estate 1, ne nw nw 26-15s-18w, spd. Lario O. & G. Co.'s Walter 1, se ne sw 2-12s-18w, td 1317 ft. Tom Palmer's Schoenthaler 1, ne ne nw 31-12s-19w, br. Harris & Haun et al's Schmeidler 1, se se sw 3-13s-17w, mim. Yarnell & Carlson's Phillips 1, nw nw se 2-14s-18w, mim. Muth et al's Penney 1, sw sw se 29-14s-18w, mim.

ELLSWORTH COUNTY — Skiles et al's Kafka 1, ne ne sw 15-17s-8w, ur 8-in csg 2750 ft. Empire O. & R. Co. et al's Kroesch 1, nw nw se 33-17s-9w, dr 1200 ft.

FINNEY COUNTY—Lone Star State Drlg. Co.'s Hamlin 1, sw sw ne 31-24s-34w, rig.

HARPER COUNTY—Marathon Oil Co.'s Zellers 1, csw nw 17-35s-8w, report last week in error, fsg 5410 ft.

HARVEY COUNTY—Empire O. & R. Co.'s Webster 1, se se sw 8-24s-2w, ur 8-in csg 2956 ft. Harburney Oil Co.'s Scrag 1, nw nw se 24-22s-3w, sd 2355 ft. Western Kansas Co.'s Warkentin 1, csw sw 1-23s-2w, dr 2960 ft.

HASKELL COUNTY—Kuhn Bros. et al's Nilson 1, sw sw se 21-28s-32w, rur.

MARION COUNTY—Milton et al's Young 1, nw nw se 17-21s-3e, td 2984 ft.

McPHERSON COUNTY—Ok-Tex et al's Moehlinger 1, se sw sw 21-21s-2w, td 3650 ft, D & A. Empire's Cunningham 1, se se se 26-18s-1w, br.

NESS COUNTY — Continental Oil Co.'s Thompson 1, ce½ c½ sw 13-18s-26w, rur.

NORTON COUNTY—Lario O. & G. Co. & Elwell's Kennedy 1, sw sw nw 22-3s-23w, td 3692 ft, D & A.

RENO COUNTY—McPherson Co. et al's Miller 1, se se ne 23-24s-5w, td 3373 ft, rust. Helmerich & Payne's Schwaiger 1, sw se ne 27-26s-5w, fsg 3800 ft. Dickey Oil Co.'s Shepherd 1-A, ne ne nw 22-26s-9w, dr 3565 ft.

RICE COUNTY—Vernon O. & G. Co.'s Boldt 1, nw sw nw 10-19s-10w, td 3388 ft, D & A. Gratton et al's Williams 1, sw sw nw 17-18s-7w, set 8-in csg 2775 ft, co. Continental & Empire's Nikkel 1, ne sw sw 13-18s-8w, td 3214 ft. Aylward et al's Oberle 1, se se sw 19-18s-10w, dr 3045 ft. Gilmac Oil Co.'s Sargent 1, se se se 31-18s-6w, spd & sd. Dickey Oil & Continental Oil Co.'s Newkirk 1, ne ne sw 11-18s-7w, ru. Witt's Hall 1, se se nw 3-20s-9w, dr 1780 ft. Duwe & Schneider's Wright 1, ne ne ne 36-21s-7w, dr 2150 ft. Simpson & Noble et al's Pulliam 1, cs½ n½ 31-10s-16w, dr 3605 ft. Skaer Oil Corp. & Reese's Dryden 1, ne ne ne 28-10s-17w, rig. Lester & Dean's Burtt 1, se se ne 29-10s-20w, ru. Hartman & Blair et al's Hall 1, nw nw nw 25-10s-17w, mim.

RUSH COUNTY—Pryor & Lockhart's Stegman 1, sw nw ne 11-16s-17w, cellar. Keith et al's Dartmouth Savings Bank 1, sw sw ne 3-17s-18w, td 3346 ft, rust. Rose Spring et al's Jacobs 1, sw se nw 8-16s-17w, dr 1305 ft. Boyle & Grossman's Wilson 1, ne ne ne 33-17s-19w, dr 1300 ft. National Ref. Co.'s Werth 1, nw ne ne 7-16s-18w, dr 565 ft.

RUSSELL COUNTY—Empire et al's Major 1, se se se 11-14s-12w, dr 3160 ft. Bridgeport Mach. & Lauck's Wyckoff 1, se nw ne 27-11s-13w, set 6-in csg 2952 ft. Chas. Newbold's Krug 1, se sw se 4-15s-14w, td 3230 ft, D & A. Berry et al's Cook 1, ne ne se 19-11s-13w, dr 2165 ft. Eisenhour & Shaffer's Humes 1, sw sw sw 6-14s-12w, sd 2300 ft. Reynolds' Fredrickson 1, se sw se 6-13s-12w, sd 2620 ft. Darby Pet. & Continental Oil Co.'s Letsch 1, se ne nw 34-14s-13w, dr 1435 ft. Central Pet. Co.'s Furthmeyer 1, ne ne ne 28-14s-15w, spd. Stearns & ne 35-19s-8w, lcn. Skiles et al's Stout 1, se se se 6-21s-9w, mim. Beardmore et al's Fuller 1, sw sw se 23-18s-7w, mim. Sage et al's Patton 1, sw sw sw 5-21s-7w, cellar.

ROOKS COUNTY—Murfin et al's Wasthusin 1, ne ne se 12-6s-18w, dr 1895 ft in new hole. Pryor & Lockhart's Bradley 1, sw sw ne Streeter et al's John Hancock Insurance 1, se sw sw 31-12s-14w, mim. Wakefield et al's Krug 1, ne nw sw 7-15s-14w, mim.

SEDGWICK COUNTY—Johnson's Jensen 1, sw sw nw 11-28s-2e, td 3404 ft, D & A. Dickey Oil Co.'s Ayers 1, sw sw nw 12-27s-2e, running 15-in csg 210 ft.

STAFFORD COUNTY—Farris et al's Snyder 1, se se nw 3-21s-11w, td 3111 ft, wocs. Kessler & Their's Evens 1, ne ne ne 30-21s-11w, dr 3075 ft. Lario O. & G. Co. et al's Andress 1, cnw ne 1-21s-13w, dr 2915 ft. Stanolind-Atlantic's Shotton 1, sw sw sw 27-22s-13w, br.

SUMNER COUNTY—Morgan et al's Veail 1, se sw ne 27-32s-2e, td 3415 ft, D & A. Helmerich & Payne et al's Elwell 1, nw nw ne 18-34s-1e, dr 3330 ft. Wilcox O. & G. et al's Hess 1, se se nw 13-34s-2w, dr 335 ft. Matthews

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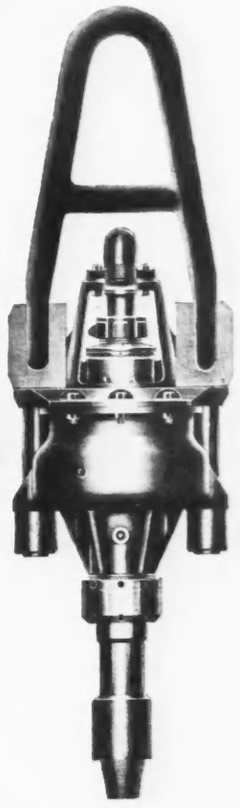

The load is carried from the foundation. This method of lifting the load through a straight pull from the bottom was originated and brought to its present stage of perfection by the Gray Tool Co. It was designed for the higher speeds and deeper drilling of today as well as the future. Past performance records have proven the superiority of the Gray Type B Swivel.

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& Derrington's Berry 1, nw nw se 14-35s-1e, dr 940 ft. Wilson et al's Clark 1, csl nw 15-35s-1w, dr 3500 ft. Craft & Wilson's Nevitt 1, ne nw ne 36-32s-2e, running 12-in csg 1037 ft. Pryor & Lockhart et al's Knowles 1, sw sw sw 30-30s-1e, cellar. The Texas Co.'s Reed 1, ne se se 11-31s-1w, cellar.

TREGO COUNTY—Continental Oil Co.'s Holcomb 1, ne se nw 26-11s-23w, td 3603 ft, rust. Central Commercial's Wagg 1, nw nw se 17-13s-21w, co 3908 ft. McNeely et al's John Lemke 1, nw nw sw 7-11s-22w, rig.

WOODSON COUNTY—Sheedy et al's Grand Lodge 1, ce¼ nw sw 4-25s-14e, td 1542 ft, D & A. Max Reynolds' Guy 1, ne ne se 29-25s-14e, sd 1400 ft. Sheedy's Baker 1, se se nw 2-26s-14e, dr 1340 ft.

SOUTH LOUISIANA

ACADIA PARISH—Magnolia's Homeseekers 1, Esterwood prospect, sec 54-10s-1w, ru.

ALLEN PARISH—Humble's J. A. Bel 1, Reeves prospect, sec 28-6s-7w, ru.

AVOYELLES PARISH — Frost Oil Co.'s Hinds Lbr. Co. 1, sec 3-3n-4e, dk.

CAMERON PARISH—Magnolia's A. Hebert 1, Big Lake, sec 13-12s-9e, dk.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Pigneur 274, Jefferson Island Dome, 12s-5e, swabbed salt water 8452 ft. The Texas Co.'s Vermilion Bay B-1, Vermilion Bay salt dome, 16s-6e, lcn.

JEFFERSON DAVIS PARISH — J. K. Lewis' Lock Moore 1, Lock Moore prospect, sec 32-7s-6w, dr sandy shale 6671 ft. Shell's Lacassine 1, Hayes prospect, sec 20-11s-5w, dr shale 8416 ft.

ST. JAMES PARISH—Shell's Colonial Sugar 1, Convent prospect, sec 5-12s-5e, dr shale 6383 ft.

ST. MARTIN PARISH—Texas Co.'s Lake Mongouloi 2, Lake Mongouloi salt dame, sec 14-10s-9e, driving piling. Same operator's St. Martin Land Co. 8, Henderson prospect, sec 9-8s-7e, dr shale 7668 ft.

WEST FELICIANA PARISH—Robert L. Morris's Percy 1, sec 89-1s-4w, dr shale 2379 ft. Southern Minerals Corp. 1, sec 54-1s-4w, set eight-in csg 224 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Lide & Greer's Davis Lbr. Co. 1, ne se 12-16n-5w, elev 305 ft, top Arkadelphia 2287 ft, chalk 2501-2831 ft, top Blossom 3070 ft, massive anhydrite 5396-5636 ft, base stringer 5753 ft, cored Hill oolitic lime sg 5867-5883 ft, 7-in csg 6128 ft, perf csg with 19 shots from 5867-70 ft, gauged 70,750,000 cu ft gas with tub pressure 580 pounds, casing pressure 900 pounds, shut in pressure, 2340 pounds, td 6144 ft. Rondeau et al's Locke 1, ne nw ne 9-15n-10w, elev 180 ft, rur. Walters et al's Davis 1, 3-16n-9w, mim.

BOSSIER PARISH — Humphreys et al's Bulkley 1, 36-21n-13w, elev 212.3 ft, claim so, woc 8-in csg 2297 ft, td 2306 ft. United Gas Pub. Serv. Co.'s Murff A-1, 17-17n-11w, elev 201 ft, top anhydrite 3585 ft, dr 4280 ft, lime and shale.

CADDO PARISH — Pyramid O&G Co.'s Wheeler A-1, 16-18n-16w, elev 250 ft, top anhydrite 3783 ft, running electrical tester before setting csg, td 3950 ft.

CLAIBORNE PARISH—Wm. C. McGlothlin's Brinker 1, sw se 10-23n-4w, elev 232 ft, dry, abn, td 4525 ft shale and strks lime. Sugar Creek Synd.'s Darrett 2, 31-20n-5w, 9⅝ in csg 4588 ft, tested est 20 mil ft gas 5660 ft, coring 5910 ft; Kilpatrick 1, sw ne 7-19n-5w, coring 4808 ft. E. T. Oakes et al's Patton Est. 1, 1-20n-5w, fsg 4238 ft, oolitic lime.

DE SOTO PARISH—Larkin & Waar's Jackson 1, 1-11n-14w, elev 329.4 ft, 10¾ in csg 556 ft, dr 3350 ft, hd lime. R. C. Payne et al's Harris 1, 11-13n-14w, sd 850 ft. C. H. Smith et al's Whitney Corp. 1, 19-10n-13w, dr plug 8-in csg, td 1590 ft.

FRANKLIN PARISH—S. C. Jensen's Bailey 1, 12-11n-3e, woc 9⅝ in csg 206 ft.

JACKSON PARISH—Caldwell L&T Co.'s Burroughs Est 1, ne nw 1-17n-1w, set surf csg, sd.

LINCOLN PARISH — Ark.-La. Gas Co.'s Causey 1, nw ne nw 32-19n-2w, elev 341 ft, 10¾ in csg 827 ft, base Anona chalk 2632 ft, top Wolf City 2644 ft, top anhydrite 3921 ft, dr 4471 ft. Caldwell L&T Co.'s Hammonds 1, nw ne nw 30-18n-1w, sd for 10-in csg 918 ft. Lide & Greer's Gardner 1, 10-17n-4w, elev 268 ft, top red beds 3810 ft, top first anhydrite 4580 ft, arr deepen 4676 ft.

MOREHOUSE PARISH—Henry E. Rondeau et al's Clark 1, se ne 10-20n-7e, elev 90 ft, rur.

NATCHITOCHES PARISH—Roy Raines et al's Raines 1, sw sw 28-9n-10w, co to deepen, td 4303 ft.

RAPIDES PARISH—Amerada Pet. Corp.'s Weil 3, 52-1n-2e, spud. Texas-Eagle Oil Corp.'s Hogan 1, 2-1n-2e, 10¾ in csg 1472 ft, tested 4 joints mud ds test 5702-51 ft, sw abn, td 6005 ft; State 1, 5-1s-2e, sd 90 ft. Texas Co.'s Weil 1, 52-1n-2e, lcn; Weil 2, 53-1n-2e, dr 5157 ft, lime and shale.

SABINE PARISH—Keen et al's Long-Bell Lbr. Co. 1, 5-8n-13w, mim. Laurel Pet. Co.'s Whitney Corp. 1, 8-9n-13w, mim (5500 ft test). A. H. Tarver's Baker 2, nw nw ne 36-8n-12w, top Zwolle marl 2205 ft, elev 347.5 ft, gas blowout 4920 ft, coring 4950 ft.

TENSAS PARISH—H. M. Jones' Chicago Mill & Lbr. Co. 1, 30-12n-10e, 10-in csg 208 ft, dr 600 ft.

UNION PARISH—Lent, Sears & Bocher's Frost Lbr. Co. 1, nec 27-21n-1e, elev 198.3 ft, top Arkadelphia 2054 ft, top Blossom 2498 ft, top main red beds 2695 ft, sd 3247 ft, sandy lime.

WEBSTER PARISH—J. L. Edwards' Hooper 1, 8-17n-9w, elev 173 ft, sd 2114 ft. J. P. Evans' Crichton 1, 35-18n-9w, elev 214 ft, Blossom 2436-62 ft, top first anhydrite 4700 ft, dr 4920 ft, anhydrite. Ohio Oil Co.'s R. L. Holloway 6, ne sw 23-21n-10w, top stringer anhydrite 4190 ft, massive anhydrite 4253-4561 ft, sr, td 7002 ft; Coyle 1, s½ se 23-21n-10w, rur. L. R. Skidmore's Barnett 1, 29-17n-9w, rur. Red Hawk Oil Co.'s Baker 1, se nw 9-23n-9w, dk and mir.

MICHIGAN

ARENAC COUNTY—Arenac Oil Co.'s Griffin 1, 19n-5e-1, sd 100 ft. Redman Oil Co.'s Kahadya 1, 20n-3e-9, dr 710 ft. Ernest Snyder's Clukey 1, 20n-6e-8, lcn.

BAY COUNTY — T. F. Caldwell, Inc.'s Kraus 1, 18n-3e-12, dr 500 ft.

CLINTON COUNTY—Stork Oil Co.'s Bross 1, 8n-2w-29, dr 800 ft.

CHIPPEWA COUNTY — F. D. Barton's Kretan 1, 41n-7e-17, sd 290 ft.

CLARE COUNTY—Fred Seigle's Fee 1, 17n-5w-26, dr 1000 ft.

EATON COUNTY—Burris-Keeler's Moon 1, 2n-4w-11, dr 2270 ft.

GLADWIN COUNTY — T. F. Caldwell, Inc.'s Parker 1, 18n-2w-21, re-driving 10-inch 180 ft. Mammoth Petroleum & Refining's Mellinger 1, 18n-2w-35, dr 240 ft. Chas. Bell's Ross 1, 18n-2w-34, dr 600 ft.

GRATIOT COUNTY — Harley Williams' Smith 1, 9n-2w-29, sd 2100 ft.

GENESSEE COUNTY — Jerome Nadell's Olds 1, 9n-8e-35, lcn.

HURON COUNTY — Wallace Markle's Opaka 1, 15n-11e-4, sd 2890 ft.

IONIA COUNTY—Frank Lyon's Geiger 1, 8n-8w-29, dr 500 ft. Terry Dale's Tew 1, 6n-7w-12, dr 290 ft.

ISABELLA COUNTY — Pure Oil Co.'s Keeler-Mitchell 1, 16n-3w-10, dr 2500 ft; Comstock 1, 13n-6w-15, dr 425 ft.

KENT COUNTY—Rex Oil Co.'s Johnson 1, 10n-1w-36, dr 2300 ft. James Barton's Smith 1, 10n-10w-29, fsg 800 ft. Mich-Exploration's Croff 1, 7n-9w-35, dr 640 ft. Associated Petroleum Co.'s Plank 1, 9n-10w-29, landed drive 280 ft, dr 600 ft.

LENAWEE COUNTY—Socony Vacuum's McCarberry 1, 5s-5e-36, sd 2552 ft. Mott and Denman's Huffman 1, 6-3s-26, dr 850 ft.

MONROE COUNTY—A. V. Oil Co.'s Roe 1, 6s-6e-19-se se sw, Trenton 2111 ft (?), bottom hole 2161-2 ft, shot 50 qts ng, flowed 130 bbls oil first 24 hours, est 50,000-250,000 cubic ft gas.

MIDLAND COUNTY—J. V. Wicklund's Roher 1, 16n-1w-7, dr 3400 ft. King Drilling Co.'s Gould 1, 15n-2w-19, dr 2300 ft.

MONTCALM COUNTY—John F. Martin's Christensen 1, 10n-6w-20, rig. Old Dutch Oil Co.'s Russell 1, 10n-6w-27, dr 730 ft. Rowmor Oil Co.'s Tow 1, 10n-6w-36, rig. Terry Dale's D. Higgins 1, 9n-8w-sw nw nw-13 lcn. Jetter Oil Co.'s McCracken 1, 9n-5w-6, spd and sd. Star Petroleum Co.'s Ward 1, 9n-5w-20, dr 1700 ft. Michigan Gas and Oil Co.'s Youngs 1, 9n-6w-1, sp-sd. W. E. Voss, Tr.'s McDonagh 1, 10n-8w-23, rig. McClanahan Oil Co.'s Lincoln Life Ins. 1, 12n-5w-29, rig.

SAGINAW COUNTY—Chas. Bell's Wegner 1, 11n-2e-10, dr 2700 ft. St. Louis Pipe's Yadovack 1, 10n-2e-13, sd 2853 ft. J. H. Hibbard's Woodward 1, 10n-5e-22, rig. T. F. Caldwell, Inc.'s McDonagh 1, 10n-5e-19, rig. Mid State Dev.'s Burlson 1, 10n-5e-21, dr 2640 ft. B. J. Skinner's Sheldon 1, 10n-3e-11, rig.

SHIAWASSEE COUNTY—Frank C. Cherr's Wilson 1, 6n-3e-34, dr 1900 ft. Cardinal Oil Co.'s Haviland 1, 5n-3e-31, rig.

WAYNE COUNTY—Lee Brown's Spicer 1, 2s-8e-6, dr 3100 ft.

MISCELLANEOUS—Thalman-Morris' Kohlman 1, 26n-7e-10, Alcona Co., sd 2875 ft. Co.-Op Oil Co.'s Hartrick 1, 8n-9e-13, Lapeer Co., sd 2655 ft. Boleman and Rademaker's Sands Lake 1, 21n-15w-8, Manistee Co., dr 300 ft.

MISSISSIPPI

CLAIBORNE COUNTY—Miss. Dev. Co.'s Crawford 1, 6-13n-4e, dr 401 ft rock.

LAMAR COUNTY—Snow-Black Pet. Co.'s Miller et al 1, ne ne sw 3-4n-15w, woc 1446 ft.

WILKINSON COUNTY—Kirby Pet. Co.'s Lanehart 1, 22-1n-2w, lcn.

MONTANA

CARBON COUNTY—Bailey Round Butte Oil Co. 1, cwl ne se 3-6s-23e, sd 1470 ft.

FERGUS COUNTY—H. C. Rowland 2, sw sw ne 13-17n-23e, abnd 760 ft. H. C. Rowland 3, e ne sw 18-17n-24e, lcn. Minnesota Co. Fenholt 1, se nw sw 24-21n-17e, dr 1085 ft. Judith Operating Co., Government 1, cse sw 26-22n-17e, pb 930 ft from 1055 ft. Judith Operating Co., Government 2, w nw ne 35-32n-17e, dr 325 ft.

GLACIER COUNTY—L. P. Jackson and Stanley Gray Dunbar 1, nw se nw 22-34n-7w, ru.

PONDERA COUNTY—Texas Co., Unit-1, cnw se 31-31n-5w, ru. Norden Corporation Hollan 1, nw nw nw 12-28n-6w, dr 690 ft. Gordan Campbell and associates 1, sw sw se 12-27n-3w, mim.

NEW MEXICO

CHAVES COUNTY—Tannehill et al, Campbell 3, cne se 1-11s-25e, dr 935 ft.

EDDY COUNTY—D. & B. Oil Co., Berry 1, cne nw 21-17s-30e, lcn. Flynn, Welch & Yates, State 73, cnw ne 10-19s-28e, dr 2050 ft. Tigner, Etz & Keyes' Keyes 1-B, cse sw 3-17s-28e, dr 562 ft. Dooley & Dixon, Commerce 1, cnw nw 18-20s-27e, ur 6⅝ in csg at 409 ft. Premier Oil Co., Dexter 2-E, csw ne 20-17s-30e, dr 925 ft. Etz Bros., State 2, cnw sw 16-17s-30e, dr 1730 ft. Tex Patillo, Thompson 2, ne ne 1-20s-28e, dr 793 ft.

UNION COUNTY—Quaker State Oil Co., Zurich 1, 2-21n-34e, spd 200 ft.

LEA COUNTY—Amerada's Weir 1-B, c sw ne 26-19s-36e, cem 8⅝-in cas 2539 ft. C. & G. Oil Co.-The Texas Co.'s Weir 1, c ne ne 14-20s-37e, rig. Conoco and California Co.'s E. M. Elliott 1, c sw sw 22-22s-37e, elev 3347 ft, rust, td 1131 ft. Culberson-Irwin & Roy Stovall's J. B. Humphreys-Humble 1, c se sw 3-25s-37e, elev 3135 ft, top anhydrite 1030 ft, top salt 1124 ft, dr 3040 ft; J. R. Stuart-Repollo 1, c sw se 10-25s-37e, elev 3105 ft, base salt 2400 ft, oil and gas pay 3280-94 ft, fsh tools and flowing by heads. Gulf Oil Corp.'s A. B. Reeves 1, c nw sw 29-20s-37e, dr 960 ft. Landreth Prod. Corp.'s E. H. Grizzell 1, c se sw 5-22s-37e, mim. Harry W. Leonard et al's B. T. Lanehart-Humble 1, c sw ne 21-25s-37e, elev 3079 ft, top anhydrite 965 ft, est 17,000,000 ft gas 2975 ft with spray oil, sd to run cas. Liberty Oil & Drl. Co.'s J. F. Hair-Repollo 1, sw sw se 24-24s-37e, elev 3157 ft, dr 2530 ft. Maljamar O&G Corp.'s M. E. Baish 6, c nw se 21-17s-32e, Maljamar area, elev 4028 ft, est 3,000,000 ft gas at 3740 ft, cem 6-in cas 3757 ft. Ohio Oil Co.'s State-Elliott 1, c nw se 30-19s-37e, elev 3621 ft, completed, flowed 356 bbls oil 15 hrs via 1-in tubing choke, td 3945 ft; Turner 1, c ne se 29-21s-37e, dk. Oil Well Drl. Co.-Southern Pet. Exploration, Inc.'s State 1-A, c sw ne 29-19s-37e, elev 3619 ft, dr 3360 ft. N. G. Penrose and Rowan-Nichols Oil Co.'s Will Cary-Humble 2, c ne sw 22-22s-37e, elev 3345 ft, dr 1200 ft; Will Cary-Humble 3, dk. Plains Production Co.'s R. L. Mosley-Repollo 1, c nw se 34-23s-37e, elev 3168 ft top anhydrite 1000 ft, est 2,000,000 ft gas, dr 3370 ft; Geo. Smith-Humble 1, c se se 4-25s-37e, elev 3174 ft, estimated 2,000,000 ft gas, dr 2945 ft. Repollo Oil Co.'s E. H. Bolding 1, nw nw nw 10-20s-37e, rig; M. J. Boyd 1, swc n½ 23-22s-37e, elev 3337 ft, dr 2690 ft; A. L. Christmas 1, ne ne ne 28-22s-37e, elev 3344 ft, dr 3165 ft; R. M. Jones 1, nwc se nw 35-22s-36e, dr 1500 ft; W. C. Roach 1, nw nw nw 21-20s-37e, dr 770 ft; J. H. Williams 2, sw sw se 33-19s-37e, elev 3568 ft, dr 1740 ft. Rowan Drl. Co. & Barney Cockburn's H. G. Mattern 1, c se sw 7-22s-37e, sp & sd. Samedan Oil Corp.'s C. U. Parks 1, sw sw sw 14-22s-37e, elev 3339 ft, fsh 1785 ft. Skelly Oil Co.'s A. L. King 1, c se nw 4-23s-37e, elev 3331 ft, top pay 3562 ft, flows by heads, co and testing, td 3674 ft; B. L. King 1, c sw se 32-22s-37e, elev 3369 ft, sandy-lime pay 3624-3680 ft, testing after nitro shot. Sun Oil Co.'s A. D. Richards 1, c ne se 6-23s-37e, elev 3369.7 ft, dr 1360 ft; W. W. Weatherly 1, c ne sw 17-21s-37e, elev 3485 ft, cem cas 256 ft. The Texas Co.'s W. T. Lanehart 1, c ne¼ 29-25s-37e, elev 3031 ft, est 20,000,000 ft dry gas at 2570 ft, mudded off to deepen. Warren L. Todd, Inc. et al's Lemon 1, c nw se 17-21s-32e, elev 3630 ft, top anhydrite 990 ft, salt series 1132-3260 ft, contract completed, sdo 3750 ft.

OKLAHOMA

ALFALFA COUNTY—Tex-O-Kan's Acre 1, csw ne 14-24n-11w, tools moved out.

ATOKA COUNTY—Vierson et al's Williams 1, ne sw nw 34-2s-10e, dr 4880 ft. Phelps & Coats et al's Fidelity Life Ins. 1, se sw nw 23-1s-12e, sd 503 ft.

BECKHAM COUNTY—Wood Pet. & Royalty Corp.'s Blair 1, nw nw se 32-9n-26w, dr 2763 ft. Carter Oil Co.'s Davidson 1, cnw sw 2-9n-25w, dr 1825 ft.

CADDO COUNTY—Denver P. & R. Co.'s

Sah-Cam 1, cse se 33-10n-10w, Crowbar at 7900 ft, ran Schlum, milling.

CARTER COUNTY—Carter Oil Co.'s Humble-Williams 1, sw ne sw 27-2s-3w, td 8030 ft, dr cement. Carter Oil Co. et al's Leon Voorhees 1, cse sw 34-5s-2w, dr 2300 ft. The Texas Co.'s Cathey 1, se ne ne 6-5s-1w, co 4187 ft.

COAL COUNTY—Shell Pet. Corp.'s Hill 3, se se nw 30-3n-10e, dr 5192 ft.

COMANCHE COUNTY—Meiling's Miller 1, ne ne sw 23-4n-12w, dr 902 ft.

GARFIELD COUNTY—Sherry et al's Hoken 1, nw nw sw 32-20n-4w, dr 6165 ft. Stanolind-Amerada's Brunken 1, sw sw ne 32-23n-4w, dr 5670 ft. Herndon Drlg. et al's Branson Community 1, sw sw se 23-24n-3w, td 5008 ft, D & A.

HARMON COUNTY—Lioalko Turst, Ltd.'s Crasnoe 1, se se sw 14-3n-25w, dr 388 ft.

HUGHES COUNTY—Schumacher et al's Schumacher 1, ne nw ne 23-5n-10e, running 2-in tubing with packer at 1782 ft. Canavan's Meadors 1, ne se sw 5-8n-10e, flowed 20 bbls oil. Phillips Pet. Co.'s Eberle 1, ne ne sw 12-5n-9e, dr 3835 ft. Sivils et al's Montgomery 1, nw sw nw 7-9n-9e, sd 2490 ft.

JACKSON COUNTY—Jackman's Fee 1, sw sw sw 27-1s-24w, fsg 2528 ft. Burnham's Oliver 1, nw nw se 26-1n-20w, dr 1240 ft.

JEFFERSON COUNTY—Campbell's Trout 1, se ne ne 6-8s-7e, sd 1694 ft. George Pace's Gardner 1, sw sw sw 23-5s-5w, sd 2532 ft. Reno Oil Co.'s Gaun 1, se sw ne 35-6s-4w, dr 1716 ft.

JOHNSTON COUNTY—Moore & Wirick's Westheimer & Daube 1, se nw ne 19-3s-4e, dr 2583 ft. Magnolia Pet. Co.'s Welch 1, ne ne ne 12-2s-7e, rust.

KAY COUNTY—Black Gold Pet. Co.'s Cooley 1, ne nw sw 25-28n-4e, td 1850 ft, re-running 8 in csg. Allen & Texas Co.'s Fulton 1, se se se 18-27n-4e, lcn.

LOGAN COUNTY — Stanolind-Amerada & Eason's Gragg 1, sw sw ne 20-18n-4w, flowed 65 bbls oil per hr, testing.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, td 6914 ft. Russell et al's Scott 1, sw se sw 29-8s-2e, sd 4963 ft. Amerada-Stanolind's Westheimer & Daube 1, sw se sw 27-6s-2e, td 6797 ft, co 6500 ft.

MARSHALL COUNTY—Singley et al's Halford 1, se sw sw 22-7s-4e, set 6⅝-in csg 480 ft, wocs. Smith's Chestnut 1, ne ne ne 23-8s-5e, dr 490 ft.

McCLAIN COUNTY—Arab Pet. Corp.'s Autry 1, nw nw nw 16-7n-3w, td 8185 ft.

McCURTAIN COUNTY—Louis Sykes' Mitchell 1, cnw sw 12-9s-26e, rur.

McINTOSH COUNTY—I. T. I. O. Co.'s Toncred 1, sw nw se 9-9n-14e, td 3773 ft, wocs.

NOBLE COUNTY—Continental Oil Co.'s Pruitt 1, nw se sw 19-20n-1w, dr 3955 ft.

OKFUSKEE COUNTY—Champlin Ref. Co.'s Thompson 1, sw sw nw 7-13n-8e, rust.

OKLAHOMA COUNTY—Hollembeck et al's Cooper 1, nw nw ne 15-11n-1e, dr 3035 ft.

OSAGE COUNTY—Elfred's Beck 1, se se ne 6-23n-7e, sd 450 ft. Midco et al's 1, nw nw se 11-23n-6e, lcn. Champlin Ref. Co.'s 1, sw sw ne 35-25n-6e, lcn.

PAYNE COUNTY—Denver Prod. et al's Pratt 1, nw nw nw 20-18n-3e, rit & tools.

PONTOTOC COUNTY — Mid-Texas Pet. Co.'s Harbet 1, sw sw se 30-5n-4e, td 1946 ft, pumped 83 bbls oil 6 hrs. Sandback et al's Sands 1, ne ne ne 20-3n-5e, dr 380 ft. Shaw's Illinois Bankers Life 1, nw se nw 1-4n-5e, dr 2130 ft.

POTTAWATOMIE COUNTY — Gulf Oil Corp.'s Bois-Clark 1, sw se se 21-6n-4e, dr 3461 ft.

SEMINOLE COUNTY—Amerada et al's Community Stout 1, ne ne sw 3-10n-5e, dr 4175 ft. Imperial Drlg. Co.'s Aldridge 1, sw ne nw 32-9n-8e, dr 990 ft. Wynona-Jarvis-Holmes' Horton 1, ne sw ne 18-7n-8e, td 4250 ft, D & A. Arkansas Royalty Co.'s Kiker 1, se se ne 9-10n-7e, rig. Sinclair Prairie Oil Co. et al's Harrison 1, ne ne nw 17-8n-8e, dr 1450 ft.

STEPHENS COUNTY—Endicott et al's McFatridge 1, nw nw sw 11-3s-9w, dr 1004 ft. Clyde Rhodes et al's Doak 1-A, sw sw sw 1-1s-5w, sd 1803 ft.

TILLMAN COUNTY — Gulf Oil Corp.'s Wearmouth 1, se nw se 31-1s-16w, dr 4395 ft. Smith's Hammill 1-A, ne nw nw 6-5s-15w, sd 495 ft.

WASHITA COUNTY—McWhirter et al's Fee 1, sw sw sw 34-8n-19w, sd 1380 ft.

EAST TEXAS

ANDERSON COUNTY—Burke Bros. et al's S. G. Moore 1 (36.3-ac), J. C. Rosson sur, Camp Hill area, lcn. Standard Oil Co. (Kan.'s) B. Hombs-Robinson 2 (57½-ac), John Adams sur, Long Lake field, lcn. Tide Water & Seaboard Oil Corp.'s S. & I. Murray 1 (315-ac), S. Sanchez sur No. 2-10, Long Lake area, cem cas 2109 ft.

BOWIE COUNTY—Woodley & Bentley's J. D. Lumpkin 1 (245-ac) John McDermott sur, 1¼ mi sw Dalby Springs, Annona chalk 1665-2090 ft, dr 2690 ft. Ben J. Russell et al's O. A. Hall 1, J. W. Weaver sur, 9 mi sw New Boston, elev 316 ft, top Annona chalk 1646 ft, co to dd, td 3424 ft.

CASS COUNTY—American Liberty Oil Co.'s Marcus Rambo 1 (86.9-ac), J. H. Rives sur, Rodessa area, elev 249.2 ft, cem sur cas; D. A. Maxie 1 (86-ac), John Collum sur elev 234 ft top Georgetown lime 3146 ft top anhydrite 5065 ft, massive anhydrite 5345-5592 ft, pay 5996-6011 ft, completed 50 bbls oil per hr on ⅜-in tubing choke. R. W. Norton, Tr.'s Mary Rives 2 (85-ac), John Collum sur, Rodessa area, Pecan chalk 1925-2475 ft, top Red Beds 3441 ft, dr 3560 ft; L. A. Haywood 2 (440-ac), P. Evans sur, lcn. Adair Heath et al's Moore Branch School 1 (2-ac), M. Reams sur, lcn. E. Key, Jr. et al's C. M. Barkett 1 (2.74-ac), John Collum sur, lcn. United Production Corp.'s J. R. Jones 1 (70-ac), B. J. Murray sur, elev 247 ft, massive anhydrite 5319-5648 ft, top Dees 5830 ft, top Young 6000 ft, td 6037 ft, completed flowed 100 bbls oil per hr ½-in choke, tp 750 lbs. McElvain & Beckett's D. A. Maxcy 1, B. J. Murray sur, lcn.

COLLIN COUNTY—Port Bolivar O&R Co.'s O. G. Durning-Clarkston 1-A (140-ac), Wm. Creager sur, Pat. 1193, elev 722 ft, sd 3866 ft.

FRANKLIN COUNTY—Ned B. Morris, Jr., et al's R. H. Harper 1 (4-ac), C. Payne sur, lcn.

FREESTONE COUNTY—Tide Water & Seaboard Oil Corp.'s J. L. Johnson 1 (894-ac), H. Wheeler sur, Long Lake area, elev 264 ft, Pecan chalk 3560-3735 ft, Austin chalk 4603-4874 ft, Sub-Clarksville sand 5030-40 ft, top Woodbine series 5272 ft, oil pay 5294-5305 ft, td, 5308 ft, fld 185 bbls 22 hrs on ⅛-in to ¼-in choke. J. C. Yancey & Lovering's M. Scott 1, H. Awalt sur No. 4, 7 mi n Fairfield, sp & sd.

GRAYSON COUNTY—Olson Drl. Co.-James Gardner et al's sw Life Insurance Co. 1 (160-ac), J. C. Jamison sur A-865, 3 mi n Pottsboro, elev 767 ft, Trinity series fr surface to 850 ft, Springer shale 850-1240 ft, Mississippian Caney shale 1240-4308 ft, fine grained sand 4308-4482 ft (with odor oil-gas 4441-82 ft), chert 4482-4637 ft, top Woodford shale 4637 ft, lost dp 4670 ft, pb to 3535 ft, drilled by junk, top Sylvan shale 4870 ft, Viola lime 4901-5096 ft, dr 5545 ft. Port Bolivar O&R Co.'s Creed Taylor 1 (160-ac), J. Fitzhugh sur, 3 mi se Gunter, sd 3931 ft.

GREGG COUNTY—John Hoover et al's T. G. Williams 1 (100-ac), David Hill sur, 3 mi ne Longview, elev 427 ft, Pecan chalk 2391-2985 ft, top Austin chalk 3447 ft, td 3860 ft, perf cas and tested dry, sdo.

HENDERSON COUNTY — Wm. McDougal, Tr et al's Elvira Price 1 (216-ac), M. Mathews sur, 4 mi s Trinidad, dk. H. M. Wilson et al's fee 1 (943-ac), Thomas Caro sur, 5 mi n Malakoff, elev 359 ft, top Pecan chalk 2300 (est) ft, sd 2800 ft.

KAUFMAN COUNTY—J. M. Scott and J. B. Woodside's E. Robinson 1 (80-ac), A. Chirino sur, lcn.

LAMAR COUNTY—J. A. Forrester et al's J. S. Woodward 1 (18¾-ac), J. W. Woodward sur, 1½ mi e by s of Minter, elev 402 ft, top Georgetown lime 2256 ft, Paluxy sand with trace gas 3060-3144 ft, top anhydrite 3735 ft, base anhydrite 4075 ft, dr sandy-shale 4217 ft.

LIMESTONE COUNTY—C. F. Lytle et al's J. L. Thompson 1-T (141-ac), w side Mexia field, Trinity test, dr 5475 ft. Monte Oil Co.'s A. L. Rosson 1, blk 4, P. Lloyd sur, Nigger Creek area, 8 mi sw Mexia, Austin chalk 2540-2770 ft, top Woodbine 2840 ft, tested sw at 2847 ft, dr by junk, td 2952 ft.

MORRIS COUNTY—Raycotuck, Inc.'s P. M. Staggers 3 (40-ac), J. D. Nelson sur, top Pecan chalk 2525 ft, td 4140 ft, crooked hole, pb to 1500 ft, re-dr 1710 ft. Steve J. Rotundi et al's W. & C. Smith 1 (50-ac), M. C. Vela sur, 2½ mi sw Naples, top Navarro chalk 2258 ft, sdo 4105 ft.

NAVARRO COUNTY—Wm. A. Reiter et al's Dr. T. W. Bounds 1 (208-ac), HT&B Ry. sur, Austin chalk 2605-2975 ft, sd in Eagle Ford shale 3435 ft. E. M. Thomason & Co., Inc.'s Estes Bros 1 (58-ac), blk 11, Wm. Gilbert sur, 1 mi e Roane, elev 427 ft, top broken Austin chalk 1700 ft, top hard chalk 1750 ft, top Woodbine series 2650 ft, sd 2781 ft.

RED RIVER COUNTY—Midwest Pet. Co. & Texfornia Oil Co.'s Hocker-Hughes 1 (160-ac), MEP&P Ry. sur No. 642, 6 mi sw Lydia, sp and sd. Annona O&G Co.'s Leo & Otto Roberts 1 (200-ac), James Bankston sur, 2 mi ne Annona, elev 396 ft, Pecan chalk 40-380 ft, sd 725 ft. Orr et al's Kurth Lumber Co. 1, Elizabeth Smith sur, 11 mi ne Clarksville, cem 10-in cas 86 ft.

ROCKWALL COUNTY — R. J. Sherman & Dodd's M. F. Lofland 1 (392-ac), W. H. Beard sur, 2½ mi se Rockwall, sd 750 ft. W. H. Carlin et al's W. H. Lofland 1 (54-ac), M. B. Jones sur, ¾ mi w Rockwall, rig.

RUSK COUNTY—McCallum et al's E. C. Gary 1 (265-ac), John Piburn sur, 5 mi s Henderson, elev 338 ft, Pecan chalk 2448-2715 ft, top Austin chalk 3224 ft, sd 3440 ft. Pure Oil Co.'s W. H. Faulkner 1 (60-ac), Wm. Elliott sur, 5 mi e Mount Enterprise, Trinity sand or 8500 ft test, elev 563 ft, dr 2750 ft. J. W. Shipman et al's Citizens Nat'l Bank (L. T. Burton) 1-A (125-ac), J. J. Y'Barbo sur, 4 mi ne Henderson, elev 432 ft, top Pecan chalk 2355 ft, tested dry, sdo 3510 ft.

SMITH COUNTY—W. L. Cloud et al's Dora Kendall 1-A, John Williams sur, 3 mi e Van field, claim show oil, sd to test, td 1290 ft. K. & Grant Colby and A. G. Thompson's W. P. Walsh 1 (335-ac), Samuel Barnett sur, 6½ mi ne Tyler, temp abd, td 1171 ft. Kelso & Thompson (was Winona Oil Corp.'s) McClung 1 (23½-ac), E. Newberry sur, 1 mi e Winona, elev 449 ft, Pecan chalk 3335-3660 ft, dr 3765 ft.

TITUS COUNTY—Jules Alford, Tr. et al's W. D. Fry 1, Isaac P. Stern sur, 1½ mi se Talco, elev 319 ft, top Georgetown lime 3550 ft, dr lime 3730 ft. L. B. Culberson et al's E. Unsell 1, center lot 1, Talco townsite, lcn Leland Fikes et al's Talco Townsite Co. 1 (100-ac), M. V. Delgado sur, lcn. Humble's Mary B. Grove 1 (82.9-ac), Ben Jones sur, 1¾ mi e Talco, elev 309 ft, Pecan chalk 1591-1733 ft, Eagleford shale 2862-3240 ft, top Woodbine series 3240 ft, top Red Beds 3590 ft, top Georgetown lime 4115 ft, or 3991 ft, sd 4492 ft, will land cas near 2000 ft; Mrs. Myra Galt 1 (10-ac), R. Winn sur, A-622, elev 346 ft, Pecan 1658-1785 ft, dr 2354 ft. Jack Hearrell et al's E. Unsell 1, lot 16, 6, Talco townsite, lcn. C. M. (Dad) Joiner et al's Huensch Hrs 1, Henry P. Banks sur, 12 mi e Talco, elev 317 ft, cem 13-in cas 278 ft, td 1004 ft. Ned B. Morris, Jr. et al's W. H. Hughes 1 (6½-ac), M. V. Delgado sur, lcn. Owens & Porter's Christ Church 1, c lot 3, blk 25, Talco townsite, lcn. John T. O'Neal, C. M. Joiner et al's O. C. Lilienstern 1 (80-ac), Wm. McCann sur, 5 mi se Talco, elev 302 ft, Pecan chalk 1375-1572 ft, top Red Rock 3254 ft, top Georgetown lime 3560 ft, sd in cap rock 4344 ft, will dd. Allen M. Peairs et al's fee 1, c lot 1, blk 30, Talco townsite, lcn. S. G. Reed & R. S. Barnswell's U. Shaw 1 (⅞-ac), Talco townsite, lcn. G. L. Tatum & D. H. Dunbar's J. Easterling 1, c lot 6, blk 16, Talco townsite, lcn. G. H. Vaughn Prod. Co.'s S. G. Belcher 1 (80-ac), I. P. Stern sur, lcn.

UPSHUR COUNTY—Joe A. Papadakis et al's P. K. Williams-Cone 1, lot 5, blk 5, J. P. Justamente sur, elev 396 ft, rig.

SOUTH TEXAS

ARANSAS COUNTY—Buckingham Oil Co.'s McCampbell 1, lots 8 and 9, sec 41; lots 8 and 9, sec 42, McCampbell Subd., James Orick sur, 2 mi nw of Aransas Pass, 8 ft fr San Patricio County lines, sands showed on electric formation test from 5425-7120 at 6534-46, 6819-24, 6900-07, td 7501 ft, plugging back to abt 6500 ft.

ATASCOSA COUNTY—R. C. Lee, Trustee (Atascosa Trust), U. A. Doumch 1, 152-ac tr, blk 10, J. T. Russell sur No. 1222, 3 miles n Poteet, coring 2800 ft. W. B. Hinton's Weigand 1, in Donovan sur No. 145, lcn. R. McIntyre's (Cliff Oil) San Antonio Joint Stock and Land Bank (H. A. Billinch) 1, J. B. Woodleff sur No. 246, 7½ mi e Coughran, sd 3185 ft.

BASTROP COUNTY—Franklin et al's Betty Lawhon 1, Standifer sur, sw of Elgin, dk blew down. Howell & Appleton's Herman Klemm 1, sd 1229 ft. J. E. Mills' C. O. Randle 1, 100-ac tr in B. Brymer sur, dr 1480 ft.

BEE COUNTY—California Co.'s W. A. Boothe 1, 100-ac tr, A. Walker sur, one mile e of Mineral, set sur csg, woc. Geo. M. Church et al's G. A. Ray 1, Anna Burk sur, 2 mi e Beeville, coring 2560 ft. Marine Oil Corp.'s Webb-Hearn 1, in 92-ac lease, E. Ryan sur, 2000 ft se disc well Beeville field, sd 5935 ft, set 7-inch casing to bottom, gun perforating; first perforations 5905-5914 ft, then 5859½ ft, well showed no improvement, has heavy gas pressure and flowing water. H. A. Pressey's R. T. Hicks 1, 1120-ac tr, Jose M. Uranga gr, ab 568, 4½ mi s of Normana, sd 2396 ft. G. M. Richardson et al's Mengers 1, center w 100-ac of W. R. Ryan 500-ac tr, Wm. Allen sur, near Tynan, Burton Drlg. Co., mim.

BEXAR COUNTY—American Gas Co.'s Oliver No. 5, 400-ac tr M. F. Rodriguez sur, Gas Ridge, td reported to be around 3000 ft, set csg, woc. Tom Anderson's C. J. Krause 1, S. McCullough sur, sd 350 ft. Carter & Ingersoll's Louis Mann 1, 60-ac tr, John Christopher sur, 3 mi s Von Ormy, sd 968 ft, waiting on 6⅝-inch csg. Crouch & Shadrock's W. Kohler 3, 88-ac tr, J. M. Baerrera sur No. 58, lcn. Joe Deupree's Mrs. R. S. Nina (R. S. Coffey) 1-A, Rodriquez sur, 7 mi s San Antonio, td 1200 ft, recemented at 1059 ft, bailed down, cement gave way, water broke in, now recementing; S. G. Winter 1, 100-ac tr in Fernando Rodriguez sur, one mi w of No. 1 Russell, dr 920 ft. H. J. Moore's Mrs. Lena Eisenhauer 1, 80-ac tr in Gertrude Rodriguez sur, 9 mi ne of San Antonio, dr 610 ft. O. M. Owensby's Minna Coreth 1, 284.04-ac tr, Adam Stafford sur No. 49, near Eckert field, sd 1091 ft, ran tubing, had slight show of oil and gas, now sd and will dr deeper into chalk. W. A. Schaeffer Co.'s P. J. Coimperlik 1, 102-ac tr, J. M. Bustillos sur, 16 mi e San Antonio, dk. H. B. Schumacher's Hilda Gillette 1, 49-ac tr in M. G. de Alamiz sur No. 20 and 7 mi s of San Antonio, dr 562 ft, shale. F. M. Shaver's A. W. Bitter 2, Jose Baerrera sur No. 58 (750 ft n of former lcn), td 517 ft, sand 476-517 ft,

set 8-inch csg at 475 ft, sand shows fair gas pressure.

BLANCO COUNTY—R. T. Rowe & W. E. Nixon's Polk Morrisey 3, 222-ac tr, Thomas Webb sur No. 91, 3 mi e of Blanco, sd 247 ft.

BROOKS COUNTY—The California Co.'s B. Garcia 1, tr No. 3, Las Mestinas de Gonzalina gr, Alta Mesa dist, reaming 5285 ft.

BURLESON COUNTY — Walter Blumenthal's G. V. Crain 1, W. C. Pearce sur, ab 297, 1 mi fr Milam County line, td 6328 ft, topped Edwards lime 6294 ft, oil show 6218-28 ft; dst 6313-31 ft, show 120 ft sulphur water and 270 ft mud, slight show of oil and gas, 15 min, cored ahead and sd for orders.

CALDWELL COUNTY—Pat Armstrong et al's No. 1 N. Dunlap Est., 431-ac farm in S. Seal sur, sd 21 ft. Detroit-Texas Dev. Co.'s W. P. Dunlap 3-A, S. F. Sanders sur, Dunlap area, sd 2390 ft. J. J. Elam et al's Francis-Brown-Cochran 1, W. F. Young sur, 5 mi e of Luling, sd 21 ft. Exploration Dev. Co.'s (Fred Meyer) W. R. Eibaud 1, 57-ac tr, S. Seal sur, Dunlap area, dk. Joe Graham's Martindale 1, S. Morrison sur, e of Staples, td 520 ft, junked and abnd. W. C. Jenning's McMahan 1, James Pinchback sur, se of Lockhart, dr 2150 ft. Ogden and Reed's Mamie Barber et al 1, 65-ac lse in Squire Damon survey, and 5 mi nw of Dale, pumped dry 2004 ft; No. 2 Mamie Barber et al, 65-ac lse, Squire Damon sur, lcn. No. 4 R. B. Vickery, 100-ac tr, Squire Damon sur, sp. Fred G. Scott's E. P. Dunavent 1, 4 mi se San Marcos, sd 245 ft. Sterling & Wilson's M. L. Strawn 1, Pablo Martinez sur, at Lytton Springs Townsite, sp and sd. M. R. Tinkle et al's Arnold 1, S. Seal sur, Dunlap area, lcn.

CALHOUN COUNTY — Continental Oil Co.'s Am. Nat'l Realty Co. (Moody) 2-A (3), sec 6, blk C, P. Garcia sur, 9 mi se Seadrift, td 9083 ft, set 5¾-in casing on bottom, recemented at 7977 ft, perforated, ran packer to bottom at 7775 ft, unable to get a comp., shut off, pulled packer and going in with ds to clean out hole. Crown Central Pet. Co. et al's M. C. Driscoll, lot 24, Armstrong Ranch subd., Benito Moralles sur A-28, dr 6774 ft in brittle shale. Hilton & Miese's J. Brundrett 1, in Wm. Little sur, reinstated, sd 192 ft.

CAMERON COUNTY—W. T. Daniels & King-Woods Oil Co.'s Port Isabel Co. 1, center lot 17, sh 29, 30 and 31, Buena Vista gr, 6 mi north Bayview, lcn abnd.

DE WITT COUNTY—Southwestern Dev. Synd. Ltd.'s W. L. C. Poetter 1, 591-ac tr in Obid Marshall survey and 1320 ft w Slick No. 1 Poetter, lcn. Universal & Gillespie's Schubel 1, C. Fitzgerald sur, abt 2 mi nw Yoakum, d 997 ft.

DUVAL COUNTY—C. H. Buckley et al's C. S. Tinney 1, 900 ft el, 1000 ft sl, sur 8, dr 700 ft. G. E. Glasscock's Milano Land & Garden Co. 1, ne corner of sur 88, but in sur 87, 6 mi se of Gov't Wells, td 46 ft sd for water. Frank J. Gravis et al's Gravis et al 1, sec 250, 9 mi w San Diego, coring 4506 ft. Howard Pet. Corp.'s G. Ruiz 1, sec 5, e of Loma Novia, 4000 ft test, coring 3345 ft, shale. Kepley Prod. Co.'s C. D. Sevier 1, sur 71, Santa Rosalia gr, spud in. Magnolia Pet. Corp.'s Ira G. Yates 1, sur 556, wait on water. Shell Pet. Co.'s J. F. Welder heirs, e½ se¼ sur 385, D&A 4004 ft, deep test in Seven Sisters field. Smith & Hamill's Bishop Cattle Co. 1, nw¼ of ne¼ of sur 70, 2 mi north of Hoffman field, abnd 3010 ft; M. C. Hubbard 1, sur 69, one mi s of Loma Novia field, dr 1665 ft. Stanolind O&G Co.'s Ira G. Yates 3, sur 559, se of Seven Sisters field, set 300 ft sur csg, woc. Texla Oil Corp.'s S. Benavides 1-C, sur 170, two miles southeast of Cole field, dr 570 ft.

EDWARDS COUNTY—Paul Teas' J. B. Stewart 1, sec 2, GC&SF sur, 14 mi se Rock Springs, sd for repairs at 4280 ft.

FAYETTE COUNTY — Ben G. Barnett's Sandy McKinnon 110-ac tr in Adam Zumwalt League 10 mi nw of Flatonia, mim for Edwards lime test.

FRIO COUNTY—Amerada Pet. Corp.'s T. G. McWilliams et al 1 (tr 3) Jose Arocha sur 299, top Austin chalk 5383 ft, csg 5393 ft, td 5575 ft, shot with 300 quarts, slopping oil over top of csg; T. G. McWilliams et al 1 (tr 6), Arocha sur 298, dr 4567 ft; T. G. McWilliams et al 1 (tr 17), J. M. Tijerina sur 300, top Austin chalk 5439 ft, casing 5442 ft, td 5676 ft, reported complete, no details; Halff & Oppenheimer 7, B. J. Gilman sur, set csg on 3900-foot sand, td approximately 3920 ft; Elgin O. Kothman, B. L. Crouch sur No. 90/9, ½ mi s of 3900-foot production and 1¼ mi e of 5600-foot production, top Austin chalk 5244 ft, set csg 5252 ft, jetted 4 bbls hour, may shoot; W. H. Smith 1476-ac tr and J. V. Mason sur No. 322, w offset Mitchell, lcn. Thorton Davis et al's Halff & Oppenheimer 1, J. D. Clare sur No. 336, 1 mi ne of Pearsall production, top chalk 5330 ft, csg 5337 ft, td 5433 ft, showing considerable oil, will shoot.

GOLIAD COUNTY—Jane Oil Co.'s (Diamond Half Oil Co.) Gillett No. 2, 745-ac tr, J. Gomez sur, 660 ft e No. 1, td 3694 ft; sand 3690-94 ft, 7-inch csg 3689 ft; comp 102 bbls first 12 hours, tp 985 lbs. cp 975 lbs. Maknolia Pet. Co.'s S. J. Tipton 1, A. S. Thurmond sur, near common cor of Karnes-DeWitt-Goliad counties, ru. Port Isabel O&G Co.'s Dauderstadt 1, in Solomon Hall sur, in e end of county, 5500-foot test, dr water well (closed well). Zeni Oil Co.'s (Cotton Belt) Lutenbacher 1, blk 25, Goliad Townsite sur, south of Goliad, oil show 4580-85 ft, had sand 4435-61 ft, show oil, dr 4750 ft in shale.

GONZALES COUNTY—O. M. Owensby et al's H. B. Steen 1, N. M. Bane sur, sd 2135 ft Tull et al's Boska 1, 61.2-ac tr, B. McClure sur, sd 1940 ft.

GUADALUPE COUNTY—Paul Armstrong's Clem Broadnaux 1, 36-ac tr, W. P. King sur, 2 mi ne Kingsbury, dr 2380 ft, Georgetown. J. E. Clark's E. W. Williams 1, Green DeWitt sur, spudded. Clark and Gay's Waldrip 1, center 1½-ac tr in Staples Townsite, G Allen sur, td 740 ft, woc. Clark & Weinert's Anderson No. 1, Green DeWitt sur, ru. Louis Crouch's J. Getzke 1, J. D. Clements sur, dr 425 ft. Eickercht & Gallaher's O. H. Jahns 1, 840-ac tr, Green DeWitt sur, 3 mi se South Darst Creek, Edwards lime test, dr 2225 ft in hard Taylor, top Taylor 2165 ft. A. C. Locke's H. Holmes 1, 26-ac tr, Cyrus Campbell sur, 2 mi n and w of Staples, sd 530 ft; J. S. Slaughter. C. Campbell sur, sd 1050 ft. R. C. Robbins' Mrs. J. W. Manford 1, James Hodges sur No. 374, 1250 ft e Manford Pool, sd 2581 ft. H. P. Suggs & L. R. Reedy's J. H. Sherrill 1, 100-ac lse, Geo Allen sur (1½ mi s of Staples), td 1262 ft, show oil in chalk, set 6⅝ csg at 1004 ft, D&A. W. J. Walton et al's Antone Zoboroski's No. 6, in J. D. Clements sur, td 2168 ft, saturated chalk 2166 ft, 7 inch csg 2156 ft, dr plugs.

HIDALGO COUNTY—J. T. Barlow et al's Marta F. de Chapa, porc 39, td 2955 ft, sand 2951½-55 ft, set csg atop sand, woc. Dean Brothers Mrs. Lula B. George 1, tr 13, porc 41, Reynosa Juris, 7000 ft e of discovery, 700 ft n of Samfordyce production, dr 1800 ft. Gerald O&G Co.'s Nelson Mortgage Co. 1, blk 38, lot A, La Blanco Agricultural subd, about 4 mi s of City of Donna, dr 720 ft. Gulf States Oil Co.'s J. C. Engelman 3, lot 3, blk 70 Las Mestinas gr, 700 ft e of Mestinas field disc well, dr 2620 ft. King-Woods Oil Co.'s Osca Daskam 2, blk 30, porc 45, 10 mi ne Mission, dk. Maxwell-Mundy-Morris' Southland Dev. Co. (Hidalgo County Water Control & Impr. Dist.) 1, lot 11, blk 20, Alamo Land and Sugar Co. Subd, Alamo gr, 4 mi s Alamo, td 725 ft, csg set 670 ft, will perf 652-60 ft, waiting on perforator. H. J. Porter et al's C. H. Swallow, lot 5, Porter sudb, Minnesota-Texas Land & Irrigation Co. tr, S. Alamo, sp and sd. Quintana Pet. Corp.'s John C. Engelman 1, e½ of lot 10, blk 94, Mestinas gr, 4 mi se of Gulf States No. 1 Engelman, coring 7200 ft. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 44, porc 46, Reynosa Juris, 4 mi e Samfordyce field, td 1810 ft, reamed to 1640 ft and sd. Union Sulphur Co.'s ARGL&I 7, tr No. 2309, blk 59, about 4000 ft e of Mercedes field, td 7608 ft, set 5 inch casing at 7530 ft, recompleting, showed o&g; ARGL&I Co. 8, lot 2120, blk No. 87, N. Capisalla District, td 7500 ft, fsh for core bbl at 7300 ft; ARGL &I Co. 9, farm tr 2268, blk 59, N. Capisalla district (abt ½ mi e of disc), spud in.

JIM HOGG COUNTY—French Oil Corp.'s Rodriguez 1, sh 1, Partition Las Cuevitas gr, td 2748 ft, reinstated, recovered all of ds at 2722 ft, now shut down. No. 2 Eugino Rodriguez, on common line of lots 18 and 19, center el and wl of sur 579, 5 mi nw of Randado, ru. S. L. Miller Oil Co.'s Yeager 2, blk 6, sur 20, spd and sd. P. H. Neilson, Trustee de la Garza 1, blk 293, Pipin subd, Randado gr, sd 610 ft.

JIM WELLS COUNTY—Houston Oil Co. et al's E. A. Hawkins et al 2, blk 11, Putnam subd, sh 3, San Diego gr, ½ mi n disc well, San Diego field, td 6301 ft, gas sand 6256-58 ft; shale with odor 6259-68 ft, sd and sh with oil odor 6242-97 ft; sand with oil odor 6297-6301 ft; attempted dst, dr pipe collapsed, now fsh. O. W. Killam's George Reynolds 1, s½ of sur 28, J. Harper, grantee, 3 mi w of Orange Grove, coring 3860 ft. Muskogee Iron Works et al's B. W. Owens 1, 660 ft s of southeast corner of Frank sur No. 152, but in Poitevent sur (replaces Sunray 1 Owens), sp and sd to lay gas line. G. M. Richardson's J. E. Garrett 1, sec 5, N. G. Collins gr, 15 mi n of Alice, near Highway 66, td 5800 ft, dk collapsed, driller killed. Texon Royalty & Lucey Pet. Co.'s Coopwood & Rolsten 1, sec 17, Richard King farm lots, 2½ mi nw Agua Dulce, coring 5375 ft in hard sandy shale. Joe E. Walsh, W. D. Wade 2, lot 2, blk "C" Bode subd, set 412 ft of 10¾-in surf csg, woc.

KARNES COUNTY—DeGraffe & Reele's Cochran 1, 460 ft el, 160 ft sl of the McConnell League, in sec of McConnell League, dk and mir.

KERR COUNTY—Auld & Evans' I. R. Heffner 1, sec 13, of BS&F sur, 25 mi nw Kerrville, sd 1380 ft. Eastland Oil Co.'s Jeff Love 7, in J. Martinez sur, sec 1594, td 1850 ft, cementing cavity 1725-1800 ft. Evans & Edminston's Will Auld 1, sec 1592, 418-ac tr, sp and sd.

KLEBERG COUNTY—Clark & Anderson's J. W. Kellam 1, lot 7, sec 53, KT&I subd, 2 mi se Kingsville field, sp and sd.

LA SALLE COUNTY—Davenport & Talbot's G. Watkins, sur 103, dr 200 ft, set 10 inch csg 105 ft. Paul Meaders & Adair et al's Reed 1, sec 136, T. Conlan subd, 15 mi e and 10 mi s of Cotulla, ru for Mt. Selman test.

LAVACA COUNTY—J. D. Aiguier et al's No. 1 A. A. Staffa, W. R. Hensey sur, 3 mi s of nl of county, fsh for ds at 2340 ft.

LIVE OAK COUNTY—R. H. Feltner et al's John T. Carter & Bros. 1, nw 120-ac of w 160-ac of sec 319 T&T Ry. Co. sur in extreme sw portion of county, near Sanger Ranch, dr 3200 ft. Ogden & Reed's D. C. Reed 1, Clegg Ranch, sw part of county, dr water well. T. T. Quinn's E. Terrell 1, 1000 ft sl, 2000 ft el of J. Haulihan sur, 1½ mi se of Whitsett, dr 150 ft.

MAVERICK COUNTY—Fulwood & Marr's State Bank & Trust Co. 1, GC&SF sur No. 3, 2 mi n of Eagle Pass, sd 770 ft. Thompson & Streeter's Joseph Wipff 1, sec 18, 7 mi w Chittim field, 10 mi n Eagle Pass, sd 220 ft.

McMULLEN COUNTY—Aransas Oil Co.'s Ruckman 2, 660 ft wl, 150 ft sl of sur 69, 13 mi sw of Wentz, sd 900 ft. Whisenant & Trenchard et al's Roos Bros. 1, sur 93, 3 mi e and n of Loma Alta field, td 2908 ft, dry and abnd, topped Pettus 2893 ft, showed sw. F. Daybault's Matula 1, 100-ac James Garner sur, 2½ mi sw Calliham, sd 1018 ft. Charles A. Hall No. 2 Claunch, 200-ac tr, M. Hely sur, ¼ mi s Calliham, 400 ft se No. 1, sd 967 ft. Hill et al's Richardson 1, sur 158, dr 200 ft. Humble O&R Co.'s Rhodes 1, sec 17, six mi n and 4 mi w of se cor of county, lcn. Magnolia Pet. Co.'s Minnie Kincaid 2, sur 86, dr 1400 ft. Reliance O&R Co.'s Shiner 2, se¼ of sec 40, Shiner Ranch subd, dr 1600 ft. V. G. Schimmel's Two Rivers Ranch 3, sec 58, one mi s of Wentz, ru. Stewart et al's Guy Lowe 1, Geo. Bright sur No. 21, 2½ mi sw Tilden, sd 2250 ft, dropped. Travelers Oil Co.'s Chas. T. Lark 2, 50-ac tr, E. W. B. Scrugham sur, n½ blk 114, lcn.

MEDINA COUNTY — Frank A. Brown's Mary Winn 1, John Ward sur, td 60 ft, set sur csg and sd. R. S. Bynum's Melton 1, 160-ac tr sur 14½, lcn. W. C. Campbell et al (Ed Falvey et al's) McMenemey 1, sur No. 331, G. Petty sur, 4 mi se Devine, td 2892 ft, top chalk 2800 ft, pb to 2190 ft, lowering tubing, pumped a little oil. N. C. Johnson's Taylor 1, 320-ac tr, sur 136, lcn.

NUECES COUNTY—J. H. Coker & Lee Bros. Oil Co.'s A. J. Geistman 1, 60-ac tr, J. Ward sur 316, td 5000 ft, pb fr 5000 ft to set csg, perf 3161-65 ft, flowed, fluid is 50 percent oil and 50 percent sw, wp 900 lbs. A. D. Corgey's Baldwin 1-A, blk 21, Russell farm lots, Villareal sur, one mi s Saxet field, reaming 4414 ft. J. T. Cox's John Harvey, share 11, Harvey lands, 2½ mi se Callahan, lcn, contract depth 5000 ft. Culton & Republic Nat. Gas Co.'s 1-C Baldwin et al, blk 13, J. C. Russell farm lots, drlg 6900 ft. Tom Graham & Republic Nat. Gas Co.'s Whelan 1, 40-ac lse, 2550 ft ne of discovery in Villareal sur, td 5254 ft, ran Schlumberger and pb to 3700 ft, now dr 4000 ft in sdtr hole. M. F. Hurlburt's J. C. Phillip 1, center lot 9, 20-ac tr, sur 48 of Flour Bluff Encinal Garden tracts, abt 9½ mi se Corpus, sd 3983 ft. R. Johnson & W. E. Skeen's Lillyan Smith 1, 3-ac tr, Bancroft farm lots, 1600 ft e Saxet Heights field, td 514 ft, dr plugs. O. W. Killam's Louis C. Carter 1, 330 ft nl and wl of 100-ac tr out of Wright Lands in the Vicente Lopez de Herrerrá gr, 5 mi ne Banquette, sp. La Jita Corp.'s Richard King Estate 2, sec 24, King ranch subd, one mile sw of prod, coring 4035 ft. J. P. Nash's G. W. Hatch 1, 18-ac tr, sec 7, H. L. Kinney sur, td 5200 ft top sand 5173 ft, D&A; dst 5173-86 ft, recovered 5 stands of salt water, ran Schlumberger. Santa Clara Oil Co.'s (Atkins & O'Neil) C. H. Cooke, sec 14, Guadrille Irrigation Co. sur, 4 mi e Driscoll, dr 3800 ft, sw sand 3837-45 ft. Thompson & McGrew's A. F. Geistman 1, 120-ac tr in J. R. Ward sur 317, offset Nelson's Buckholt 1, lcn. United Prod. Corp.'s M. L. Rivers 2-A, 647-ac tr in Chapman Partition, 3800 ft s No. 1-A, dr 1950 ft.

REFUGIO COUNTY—Quintana Pet. Corp.'s Fannie Heard 1, Thomas Webb sur, ab 298, 3 mi e of Greta field, 1 mi n Tomoconnor, dr 5500 ft, Greta sand 4390-4406 ft, show mud, oil and sw. Sorey et al's Cable 1, sec 4, blk 18, Sunshine subd, Refugio Town tracts, sd 3694 ft, show oil and sw thru perfs 3682-92 ft. United Prod. Corp.'s I. J. Fox 17, 1930 ft nl, 2450 ft due w of sel of lse in Wm. Hews sur, td 6259 ft, dst 6247-59 ft, recovered 300 lbs. pressure 10 minutes, 10 ft gasoline, sandy shale, gas 6251-57 ft, 5 inch csg 6248 ft, woc.

SAN PATRICIO COUNTY — Benedum & Trees' Mrs. E. H. Welder 2, sec 19, Welder Ranch subd, 3½ mi ne Sinton, sand 5700-10 ft, set 7⅝ csg 5694 ft, ran liner and got it clogged up, killed well and pulled liner, will recomplete; Jones 1, nw½ sec 65, George H. Paula subd of Coleman-Fulton Pasture Co. Lands, 3 mi e

Whitepoint field and 4½ mi nw of Portland, coring 4600 ft. C. B. Bunte's W. C. Mayfield 1, tr 11, Roos subd, 2 mi n of Whitepoint field, mim. Esnes Oil Co.'s (George E. Smith) J. R. Britton 3, 160-ac tr, sec 6, blks 7 and 8, 2nd subd, of Taft Farm lands, lcn. Nabod Royalties, Inc.'s (Texon Drlg. Co.) R. L. Rambo 1, lot 6, sec 35, 4th addition Taft Farm Lands, ¼ mi e of s end of Plymouth field dk (leases in litigation). Portilla Oil Co.'s E. H. Welder 1, sec 37, Welder Ranch subd, one mi sw of Plymouth field, sd 1912 ft for fuel, laying new lines. Santa Clara Oil Co.'s (Atkins & O'Neil) J. F. Welder heirs, 1250-ac lse, P. Villareal sur, 1½ mi sw of disc well, dr 5500 ft. Shell Pet. Corp.'s G. W. Pullin 1, sec 1, second addition Taft Farm Lands, coring 3507 ft. Willis Storm's Nancy Hobbs 1-A, 50-ac tr, M. P. J. & N. Delgado sur, coring at 5267 ft for Hockley.

STARR COUNTY—O. G. Borah et al's V. G. de Guerra 1-A, sh 92, porc 68, 2 mi n of Roma, dr 680 ft. John H. Clopton et al's Kelsey-Bass 3, 655 feet sel, 3435 ft swl of sur 357, sd for orders 700 ft. Coreta Pet. Co.'s J. H. Burnett (Haden et al) 1, sh 47, porc 80, dr 2160 ft. H. H. Currie's Y. G. Garcia 1, 1113 ft sl, 1660 ft el, sh 7-B, porc 71, lcn. Griffin & Kimbrough's Guerra 1, sh 298, porc 69, n of Mier, lcn. Harter & Maynew's Sanchez 3, sh 69, porc 72, n Roma, D&A 505 ft. Otto W. Woods, H. P. Guerra 1, lot 35, Conroe subd, porc 55, Mier Juris, spud in and shut down.

TRAVIS COUNTY—Albrecht & Brinkrueger, Sr.'s, M. C. Swenson 1, 75-ac tr, L. Kimbro League, sec 5, dr 1260 ft. Arts & Co.'s Wolff 1, Thomas Hancock sur No. 20, ¼ mi n New Sweden, sd 1280 ft. Sal-Mar Oil Corp.'s P. Carlson 1, 40-ac tr in M. W. Smith sur, 4 mi n of Kimbro, lcn. Mrs. Turner's M. E. Abramson 1, M. E. Abramson 100-ac tr, L. Kimbro sur, D&A 805 ft.

VICTORIA COUNTY—Rowan & Hope's A. W. Scheel 1, Scheel 195-ac tr in J. E. Escalera grant, dr 425 ft.

WEBB COUNTY—Foster Barnsley's G. H. Webster 5, ne¼ of sw¼ sur 684, td 3047 ft, sand 3032-47 ft, set 750 ft of 4½ in casing last 18 ft perforated, sd. Mills Bennett's L. Moglia 1, 692 ft e and 330 ft n of se cor of sur 709, set 8⅝-in csg at 720 ft, woc. O. W. Killam's A. M. Bruni 7, 3280 ft nel, 6437 ft sel, tr B-7, El Ranchito 6723.5-ac tr, J. V. Borrego gr, td 1112 ft stdg, dry sand 1106-1112 ft. Luling O&G Co.'s Peal 1, nw¼ of se¼ of sur 72, td 2100 ft, testing Mirando sand, one-half mi n Lopez field. Payne & Martinez's Mrs. M. P. Perry 1, sur 771, lcn. S. S. & B. Oil Co.'s Lone Star Construction Co. 9 (now Lutex Oil Co.) porc 12, ½ mi nw of Laredo, sd 2004 ft. Smith & Hamil's A. M. Bruni 1, 330 ft el and nwl, sur 2213, dr 2915 ft, hard rock. South Texas Oil Co.'s Fee 1, blk 21, sec 768, 1½ mi sw Laurel field, abnd 2676 ft. W. H. Vernor, Tr.'s Jefferies Ranch 1, blk 13, sec 1454, 30 mi nw Laredo, sd 1320 ft.

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WILLACY COUNTY—Shell Pet. Co.'s Yturria 1, most southerly se corner of sh 64, td 2500 ft, drlg ahead after installing new boiler.

WILLIAMSON COUNTY—Glass Bros.' A. Albert 1, P. Coursey sur, sd 785 ft. H. F. Goff's Charles Patschke 1, 100-ac tr in Foley sur, 2 mi se of Thorndale, td 1135 ft, sand 1130-55 ft, set csg, woc. James H. Holdeman et al's Amor Forwood 1, 160-ac tr in H. T. & B. Ry. sur, sec 4, sur 14, drilling 960 ft in shale.

WILSON COUNTY—Comet Oil Co.'s Jim McDaniel 1, 343-ac tr in Conception Botello sur, 4 mi Poth, sp and sd. Otto Hierholzer's E. M. Hierholzer 1, R. Salinas sur, lcn. A. G. Reimenschneider's Lon Harrell 2, 209-ac tr in Manuel Baerrera sur, 5 mi s of Floresville, dr 115 ft.

ZAPATA COUNTY—Dan Auld & Oklahoma Co. of Texas' J. M. Sanchez 1, blk 37, sur 9, Borrego grant, north end of county, ru. Ivan Howard et al's Y. Martinez 1, blk 1, sur 206, drlg 1250 ft; Y. Martinez 2, 330 ft nel and nwl sur 241, clearing lcn. J. J. O'Hern's M. J. Raymond blk 5, O'Hern subd, sh "E", porc 27, 12 mi se Zapata, td 2658 ft, ran tubing on packer 2500 ft, swab salt water, plugged and abnd. O. J. Perren's Uribe 1, blk 31, Perren subd, sh 4, 7, 5, San Ygnacio subd, Borrego gr, dk.

ZAVALLA COUNTY—Bay Oil Corp.'s Natl Bank of Commerce 1, 1320 ft wl, 930 ft sl of sec 43, blk "A" in AB&M sur, building dk. W. L. Bridges' E. B. Flowers 1, sec 19, blk 1, I&GN RR. sur, dr 400 ft. Frank Buttram et al's Whitecotton 1, B&M sur No. 1, dr 1400 ft. Leona Oil Corp.'s George West 1, C. Bustillo sur No. 1, dr 3825 ft.

TEXAS GULF COAST

BRAZORIA COUNTY—Gulf's Fairfield 1, Lochridge prospect, A. Robeson sur, dr shale 6992 ft. Texas Gulf Producing Co.'s Sparks 1, Angleton prospect, Wm. Roberts sur, fsh 3975 ft. Strake Petroleum Corp.'s K. Poole 1, Poole Ranch prospect, W. Eggers sur, repairing rig 6425 ft.

CHAMBERS COUNTY — Glenn H. McCarthy's Pitt 1, Wiinie prospect, J. M. Durran sur, woc 1395 ft. Salt Dome & Gem Oil Co.'s Lawrence 2, Cotton Lake prospect, S. Barrow sur, showed oil on drill stem test 6661 ft.

COLORADO COUNTY—E. W. Johnson's Drymalla 1, e of Columbus, T. Coleman sur, abd 5156 ft.

GALVESTON COUNTY—Coastal Minerals Dev. Co.'s M. J. Joslin 1, Friendswood prospect, S. McKissick sur, dr clay 50 ft. Sun's Hughes 1, Green Lake prospect, W. C. M. Baker sur, milling 8508 ft.

GRIMES COUNTY—Crooke Brothers' Greer 1, near Carlos, P. B. Connor sur, sd 90 ft.

HARDIN COUNTY—Republic Prod. Co.'s Burrell Fee 1, Silsby prospect, A. A. Burrell sur. Resource Prod. Co.'s Howeth 1, sw of Ariola, A. J. Cotton sur, woc 750 ft. Amerada-Stanolind's Esperson 1, Deer Park area, s of Ship Channel, G. N. Patrick sur, dr shale 2860 ft. Amerada's Dopsalus 1, Fairbanks-Satsuma prospect, W. C. R. R. sur, blk 1, sec 2, ru. Bunte et al's Adams 1, Cedar Bayou prospect, B. Barrow sur, dk. E. E. Young's Griffith 2, w of Humble, A. R. Bodeman sur, woc 4485 ft.

JEFFERSON COUNTY—Magnolia's Funchees 1, Cheek prospect, s of Amelia, H. T. & B. sur No. 16, dr shale 4070 ft. Smith & McDannald's Grinell 1, n of Port Arthur, Grisby sur, coring shale 8709 ft. Sun's Broussard 1, Labelle prospect, B. Blackmon sur, dr shale 7380 ft.

LIBERTY COUNTY—Atlantic & Brace's E. E. Hardy 1, Hardin area, J. Robeson sur, Crown Central's Davis 1, n of Esperson field, D. Kohernut sur, dr shale 7128 ft.

MATAGORDA COUNTY — Continental's Feife 1, Citrus Grove prospect, J. S. Chriswell sur, sd 7620 ft. Helmerick & Payne's Hawkins 1, Shepherd's Mott area, D. A. McCarthy sur, no report. H. M. Smith Corp.'s Wadsworth 2, Sheppards Mott area, S. R. Fisher sur, sd 1302 ft. Sun's Craig 1, e flank of Hawkinsville dome, T. Williams sur, sdtr 5231 ft. John Deering's Estill 1, Cedar Lane prospect, Tone & Jamison sur, coring salt water sand 6560 ft.

MONTGOMERY COUNTY — Chapman & Smith's Delta Land Co. 1, Dacus area, T. Sheppard sur, abn 4003 ft; same operator's Delta Land 2, T. Sheppard sur, dr shale 3525 ft. Wm. Thompson's Scott 2, Dacus area, F. A. Wheeler sur, dr shale 1390 ft.

POLK COUNTY—J. T. Lightfoot's L. Davidson 1, ne of Corrigan, Houston County School Land sur, sd 3135 ft.

SAN JACINTO COUNTY — Gholson & Decker's Randolph 1, Evergreen area, Vital Flores sur, mim.

WASHINGTON COUNTY—W. D. Twichell et al's Hoxie 1, S. Clampit sur, sd 1501 ft.

WHARTON COUNTY — Pure's Paige 1, Blue Basin prospect, J. Pirie sur, dr shale 8809 ft. Sterling Oil & Refining Co.'s Genzer 1, East Bernard prospect, J. Scott sur, sd 720 ft.

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This Week with the Industry's EQUIPMENT SUPPLIERS

Tobin Displays Picture Map of Entire Gulf Coast

One of the most unusual examples of aerial photography ever exhibited is on display in the Gulf Building, Houston, by Edgar Tobin Aerial Surveys. The huge picture covers the entire coastal strip between the Mississippi and Rio Grande Rivers, and is one of the greatest single composite aerial photographs ever completed. The width of the strip photographed ranges from 150 to 200 miles and the length is more than 600 miles. The area covered by the photograph is more than 75,000 square miles.

The single picture is made up of hundreds of smaller pictures that have been matched to give an accurate outline of an area featured by swamps, heavily wooded sections and cultivated localities. The entire picture is pasted to the floor, and in locating landmarks it is necessary to walk on the picture, which is reinforced by linen underneath. The picture covers a large part of an entire floor in the Gulf Building and represents the work of a large number of men during several years.

The scale of the picture is 2000 feet to the inch, a size that shows all important landmarks. The original photographs from which the mosaics were made had a scale of about 1200 feet to the inch. After completing the mosaics from the thousands of original photographs, the finished photographs making the large picture on display were made from the mosaics.

Not more than one day in four is suitable for aerial photography along the Gulf Coast. All pictures in this district are taken from an elevation of about 12,000 feet. The difference in altitude along the coast is not enough to give trouble from contrasts. In flying parallel lines and taking pictures every six seconds, there is a considerable overlapping that must be trimmed and matched.

Any person familiar with the Gulf Coast will find much of interest in the picture. Every village, city, field, stream and wooded tract is shown clearly. Cities like Houston and Beaumont are readily found, and it is little more trouble to locate smaller landmarks. The coast line is surprisingly even.

The company also has on display the various types of pictures and maps it furnishes. Aerial photography is being extensively used to check surveys and titles, the property lines as they are now accepted being super-imposed on actual photographs to determine the accuracy of the original survey.

The exhibit is educational and gives the average person a good idea of the importance of aerial photography to the petroleum industry.

Burns Becomes Manager Grant Oil Tool Company

Announcement of the appointment of Erwin Burns to the post of general manager of Grant Oil Tool Company is made by John Grant. Burns recently left Baash-Ross Tool Company, of which he was general manager, to accept his new position.

Burns has been identified with the oil tool industry for more than 15 years and is considered an authority on the design, operation and manufacture of many classes of oil tools and equipment. He has been active for several years in cooperating with oil companies and other tool manufacturing companies in establishing uniform standards and trade practices.

John Grant will leave on April 4 for New York, enroute to Europe. He will be abroad for two months or more and will visit the head offices of oil companies in London, The Hague, Paris and Roumania. Mrs. Grant will accompany him.

Harry Hester continues as comptroller and credit manager, with headquarters at the office and factory at 2042 East Vernon Avenue, Los Angeles, California.

Wilson Supply Company Opens Victoria Store

Wallace D. Wilson, president of Wilson Supply Company, Houston, has announced that his firm has opened another branch store at Victoria, Texas.

Clyde S. Graham has been appointed manager for Victoria district, with headquarters at the store. H. E. Hunter has been named store manager and Hal Tanksley, assistant store manager.

The opening of the Victoria store extends Wilson Supply Company's chain of branches to nine. Other branch stores are located at Barbers Hill, Kilgore, Greta, Gladewater, Bay City and Corpus Christi, Texas; Lake Charles and Rodessa, Louisiana.

Gadget Inventors Have Exhibit at Tulsa Show

Gadget inventors, provided they have an article for use in the petroleum industry, will have the opportunity to exhibit them free at the oil industry's ninth International Petroleum Exposition held in Tulsa, May 16 to 23, according to B. W. Logue, chairman of the inventor's congress division of the exposition.

"Some of the items already approved by the technical committee for the exhibit include: new pumping units; valve for working barrel; polished rod grip; 'fool proof' power safety disconnect and connect units; pipeline expansion joint; and 'I' beam making use of curved surfaces for added strength," Mr. Logue said.

Inventors are requested to send in a full

JOHN GRANT

ERWIN BURNS

HARRY HESTER

description of their invention, a photograph and blueprint if possible, and the size it will take for exhibition. There are probably a great many patents, inventions and ideas not yet manufactured that should interest the oil industry. Some of these may, in time, revolutionize the entire petroleum industry and the exposition is organizing this exhibit in the hopes that oil men may discover any gadgets of possible merit.

WERNER MULLER

German Firm Sends Muller to Oil Show

Alfred Wirth & Company, Erkelenz, Germany, announces Werner Muller, chief engineer, will arrive in New York April 19 to attend the Oil Equipment and Engineering Exposition in Houston April 20 to 25, inclusive. Muller's firm is engaged in importation of American manufactured drilling and production equipment and also in the manufacture of certain oil field equipment.

Heffron Represents Babcock & Wilcox

The Babcock & Wilcox Tube Company, Beaver Falls, Pennsylvania, announces the appointment of A. D. Heffron, Jr., as district sales manager of its Chicago territory with headquarters in the company's Chicago office, 1502 Marquette Building. He brings to the company's customers in that area an intimate knowledge of seamless tubular products such as the company manufactures.

Industrial Supply Company, Wichita Falls, Texas, announces appointment of W. F. de Haas, formerly manager of Atlantic, Pacific and Gulf Refining Company, as representative in South Texas. De Haas will be headquartered in Freer, Duval County.

Orders received by General Electric Company for the first quarter of 1936 amounted to $59,569,879, compared with $49,379,932 for the corresponding quarter of 1935, an increase of 21 percent. President Gerard Swope announced recently. This was the largest quarter since the third quarter of 1931.

Catalogs...Bulletins

Air Compressors

Allis-Chalmers Manufacturing Company, Milwaukee, recently issued for distribution leaflet No. 2218, describing its "Ro-Twin" air compressors, an original development of the company. The new type compressors feature rotary motion.

Jigs and Fixtures

The Lincoln Electric Company, Cleveland, Ohio, recently published an interesting bulletin that is called "A Guide to Lower Costs with Shielded Arc Welded Steel Jigs and Fixtures."

Diesel Engines

Cummins Engine Company, Columbus, Indiana, recently issued for distribution an attractive booklet that describes numerous typical installations of the company's Diesel engines. The material is divided into three groups; trucks and busses, industry and marine field.

Pump Reducers

Foote Bros. Gear and Machine Company, Chicago, has ready for distribution a very complete bulletin describing the helical oil well pumping reducers it manufactures. Several tables and charts are presented to give the pump user an idea of the type of equipment to select.

Turbine Generators

General Electric Company, Schenectady, New York, recently issued bulletin No. GEA-2295, describing its direct current turbine-generator sets of from 10 to 400 KW and listing their operating advantages.

Pipe Threading and Cutting Machine

Landis Machine Company, Waynesboro, Pa., has issued bulletin No. C-82, which is descriptive of the "Little Landis" pipe threading and cutting machine. The bulletin outlines in detail the distinctive features in design and construction of this machine.

Water Locating Instrument

Dale Service Corporation, Los Angeles, California, has ready for distribution an interesting booklet describing its instrument for locating the source of water in oil wells. The booklet is well illustrated and considerable operating data is presented.

Miscellaneous Products

The American Brake Shoe and Foundry Company, New York City, has issued a 32-page booklet that describes the products manufactured by its subsidiary companies. The booklet will be mailed to interested parties upon request.

Six-inch gear-operated "Hydro-Seal" plug valve—one of a large order recently shipped by MacClatchie Manufacturing Company, Compton, California, to an operator in the Gulf Coast. This valve, hand or gear operated, is made by the company for working pressures from 250 to 3000 pounds.

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Squeaks from the Bull Wheel

Picker

The Manchester Guardian tells of an English prison missionary who, in making his rounds of the cells, use to ask every inmate:

"Well, my man, and what do you do when you are out of prison?"

One convict answered: "In Spring I picks peas, in Summer I picks fruit, in Autumn I picks 'ops, and in Winter I picks pockets."

"And what happens then?" asked the missionary.

"Then," continued the prisoner, "I comes in ere and picks oakum."

Saddest Story

New York's building service strike was on. Two business men, one of whom had offices on the 61st floor and was a prospect for the other man's merchandise, had met in the lobby and were wondering how to get to the prospect's desk for certain necessary papers.

"Oh, come on," said the salesman. "We can walk up and settle this business today. It isn't far."

"It's 61 floors!" exclaimed the other.

"A mere nothing. Here's what we'll do. On the first 20 floors, we'll tell funny stories. On the second, we'll sing. On the last 20, we'll tell sad stories. Breathless and weary, they arrived at the 60th floor.

"It's your turn to tell one," puffed the salesman.

"I—I'm afraid mine's going to be very sad," gasped the prospect, frantically searching his pockets. "I—I've forgotten the keys to the office."

Worse Punishment

Two gangsters were escorting a member of a rival gang across a lonely field on a dark and rainy night.

"What rats you are," grumbled the doomed one. "Make me walk through a rain like this."

"How about us?" growled one of the escorts, "we've got to walk back."

Nineteenth

A group of golfers were telling tall stories. At last came a veteran's turn.

"Well," he said, "I once clubbed a ball (accidentally, of course) through a cottage window. The ball knocked over an oil lamp, and the whole place caught fire."

"What did you do?" asked his friends.

"Oh," said the veteran, "I immediately teed another ball, took careful aim, and hit the fire alarm in the next street. And that brought out the firemen before any damage was done."

Safe

Even when the fighting was hottest, the colonel of an Irish regiment noticed that one of the privates was following him everywhere, with apparently much devotion. At length he called the man to him and said: "You've stuck to me well this day, Private Rooney."

"Yis, sor," replied Rooney, saluting smartly. "Me ould mother she sez to me, sez she: 'Patrick, me boy, stick to the colonel, and ye'll be all right; them colonels nivir git hurt.'"

Saved for the Count

A lady and her little daughter were rounding out a holiday afternoon in town by doing some unimportant shopping at a five-and-ten-cent store. Finally they found themselves standing at the tropical fish counter, looking at five small, quiescent turtles in a glass bowl. The daughter decided she wanted one, and asked a salesgirl the price.

"You wouldn't want any of those turtles, dearie," the salesgirl said. "They're all dead."

"You should have kept water in the bowl," the lady said severly. "No wonder they're dead."

"They've been dead for a week," the salesgirl told her calmly. Then why, mother and daughter wanted to know, did the store keep them?

"Because," came the patient answer, "we're saving them for inventory."

Scotch Holiday

A commercial traveler, held up in the Orkneys by a storm, telegraphed to his firm in Aberdeen: "Marooned here by storm. Wire instructions."

The reply came: "Start summer holidays as from yesterday."

Descriptive

"Take it easy; didn't you see that notice—'Slow Down Here'?"

"Yes, officer, but I thought it was describing your village."

Avoided Contractions

William Williams disliked nicknames. He used to say that most given names were ruined by abbreviations, which was a sin and a shame.

"I, myself," he said, "am one of six brothers. We were all given good, old-fashioned Christian names, but all those names were shortened into meaningless or feeble monosyllables by our friends. I shall name my children so that it will be impracticable to curtail their names."

The Williams family, in the course of time, was blessed with five children, all boys. The eldest was named after the father, William. Of course, that would be shortened to "Will," or to enfeebled "Willie"—but wait. A second son came, and was christened Willard. "Aha," chuckled Mr. Williams. "Now everybody will have to speak the full names of each of these boys in order to distinguish them."

In pursuance of this scheme, the next three sons were named Wilbert, Wilfred and Wilmont.

They are all big boys now. And they are respectively known to their intimates as "Bill," "Skinny," "Butch," "Chuck" and "Kid".

Mum's the Word

"Now, Norah, when you wait on the guests at dinner, please don't spill anything."

"No, ma'am, I won't say a word."

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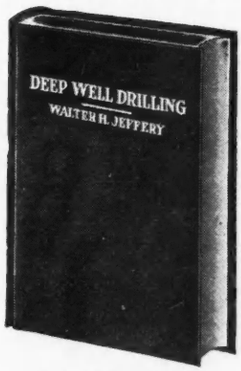

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